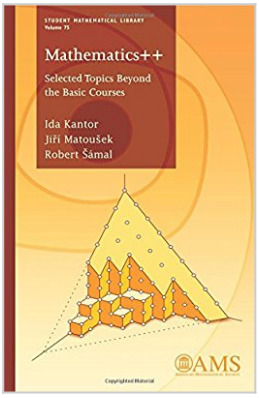

Mathematics++: Selected Topics Beyond the Basic Courses (Student Mathematical Library)

By Ida Kantor, Jiri Matousek, Robert Samal

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Mathematics++ is a concise introduction to six selected areas of 20th century mathematics providing numerous modern mathematical tools used in contemporary research in computer science, engineering, and other fields. The areas are: measure theory, high-dimensional geometry, Fourier analysis, representations of groups, multivariate polynomials, and topology. For each of the areas, the authors introduce basic notions, examples, and results. The presentation is clear and accessible, stressing intuitive understanding, and it includes carefully selected exercises as an integral part. Theory is complemented by applications-some quite surprising-in theoretical computer science and discrete mathematics. The chapters are independent of one another and can be studied in any order. It is assumed that the reader has gone through the basic mathematics courses. Although the book was conceived while the authors were teaching Ph.D. students in theoretical computer science and discrete mathematics, it will be useful for a much wider audience, such as mathematicians specializing in other areas, mathematics students deciding what specialization to pursue, or experts in engineering or other fields.

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Editorial Review

Review
The book under review contains six chapters that can be read independently, each one surveying one mathematical topic. ... It is carefully written, and it is better than a collection of lecture notes. Such books are needed for students, as a complement to the standard textbooks and to present more specialized applications of classical mathematics. The reviewer wishes there were many more such books. --Athanase Papadopoulos, ZMATH

This book has its origins, we are told, in the authors' experiences teaching graduate students in computer science, who needed background in certain mathematical topics. Since these topics were not covered in the basic courses that these students had taken, the authors undertook to introduce them in courses spanning several semesters, the lecture notes of which, suitably expanded, became this text. ... I like expository books, because I think, particularly in these days of increasing specialization, that they serve a valuable purpose, not only for students but also professionals who want to see what's going on in other areas, or who need some background in one area for research in another. This book is a fine example of that genre. --Mark Hunacek, MAA Reviews

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