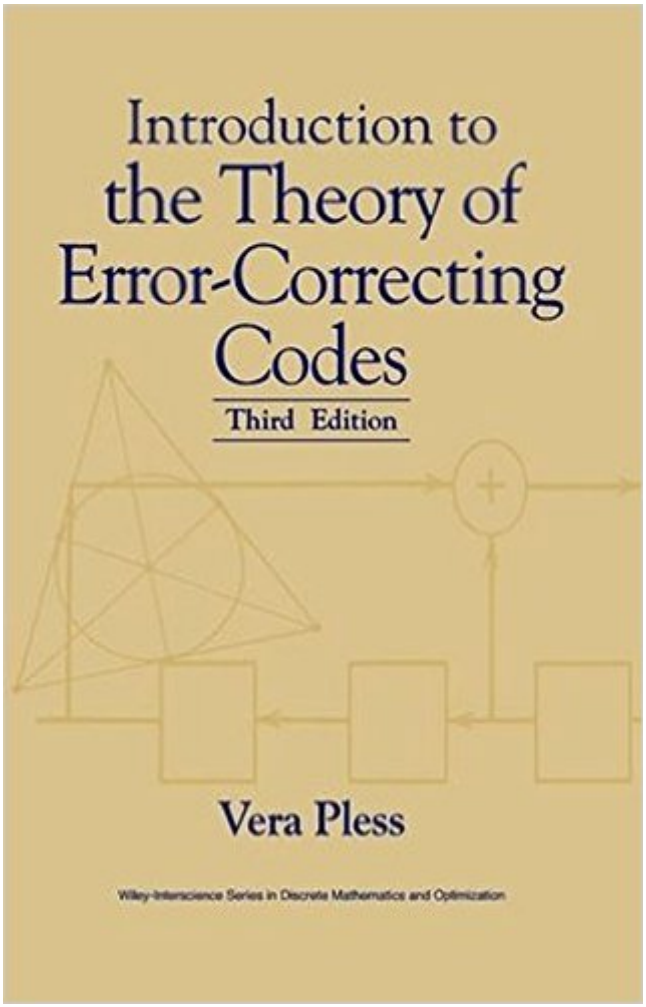
Introduction To The Theory Of Error-Correcting Codes



Synopsis

A complete introduction to the many mathematical tools used to solve practical problems in coding. Mathematicians have been fascinated with the theory of error-correcting codes since the publication of Shannon's classic papers fifty years ago. With the proliferation of communications systems, computers, and digital audio devices that employ error-correcting codes, the theory has taken on practical importance in the solution of coding problems. This solution process requires the use of a wide variety of mathematical tools and an understanding of how to find mathematical techniques to solve applied problems. Introduction to the Theory of Error-Correcting Codes, Third Edition demonstrates this process and prepares students to cope with coding problems. Like its predecessor, which was awarded a three-star rating by the Mathematical Association of America, this updated and expanded edition gives readers a firm grasp of the timeless fundamentals of coding as well as the latest theoretical advances. This new edition features: * A greater emphasis on nonlinear binary codes * An exciting new discussion on the relationship between codes and combinatorial games * Updated and expanded sections on the Vashamov-Gilbert bound, van Lint-Wilson bound, BCH codes, and Reed-Muller codes * Expanded and updated problem sets. Introduction to the Theory of Error-Correcting Codes, Third Edition is the ideal textbook for senior-undergraduate and first-year graduate courses on error-correcting codes in mathematics, computer science, and electrical engineering.

Book Information

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Customer Reviews

The theory of error correcting codes is a foray into number theory. It can be very abstract. And this might be the problem that some readers will have with the book. The discussion involves finite field theory and key ideas like permutations. All this is necessary to understand the topic.But for students lacking a strong theoretical background in maths, getting to hands on manipulations and getting a strong intuitive understanding of the codes can be difficult. Each chapter does have an extended exercise set. Which is good. But the exercises themselves are also quite abstract.

The "Introduction" in the title should be replaced with "A Revision .." The explanations are concise, and not much examples given. Without any prior background, it is difficult to grasp the point of each paragraph.

I had to buy this book for my upper division (discrete) math course, and I must say this book is not the best introductory text.I don’t know if there’s a better one as my professor professed out of this one rather extensively.Luckily I had a good professor, so the book wasn’t as bad compared to if I had just read this book by itself (and I’m a math major, I can read a math book in a week and understand it!).It has a relatively "condensed" writing style, even for a math book. There is little discussion as to why I should care about why a code should be treated as a linear subspace of (Z/2Z)^n. There is, come to think of it, little discussion *period*.I wouldn’t recommend buying it unless you had to for a course.

easy reading, good book

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