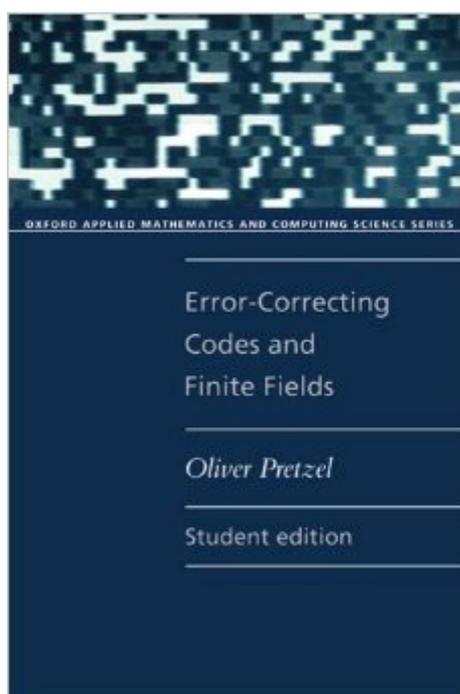# Error-Correcting Codes And Finite Fields. Student Edition (Oxford Applied Mathematics And Computing Science Series)

## Synopsis

This book provides engineers and computer scientists with all the tools necessary to implement modern error-processing techniques. It assumes only a basic knowledge of linear algebra and develops the mathematical theory in parallel with the codes. Central to the text are worked examples which motivate and explain the theory. The first part introduces the basic ideas of coding theory. The second and third cover the theory of finite fields and give a detailed treatment of BCH and Reed-Solomon codes. The fourth part is devoted to Goppa codes, both classical and geometric, concluding with the Skorobogatov-Vladut error processor. A special feature is a simplified (but rigorous) treatment of the geometry of curves.

## Book Information

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## Customer Reviews

I have used this book for self study of the subject of error correction coding and I find it excellent. It is clear and well organized, with easy language and good examples all along. It does not require a professional mathematician to understand even the most subtle passages.I read it in conjuction with Todd Moon's other book on Error Correction Coding (also an excellent choice) and although Pretzel's book is much shorter and without examples of hardware, I much appreciated its style and structure.It would be nice if the author would publish an up-to-date errata of the several printing mistakes.

Overall an excellent book on coding theory. Pretzel discusses fundamental codes for error

correction such as hamming codes, BCH codes and Reed-Solomon codes. His presentation of finite fields is excellent. He does not simply slap equations down but leads you by way of examples and intuition and then applies them towards the construction of BCH and Reed-Solomon codes. This is an excellent book on coding theory.

This book have a good introduction of basic coding theory. Very interesting the Z/2 fields and the polynomial arithmetic. This book is used at University of Salamanca, 5th of Ingenieria Informatica.

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