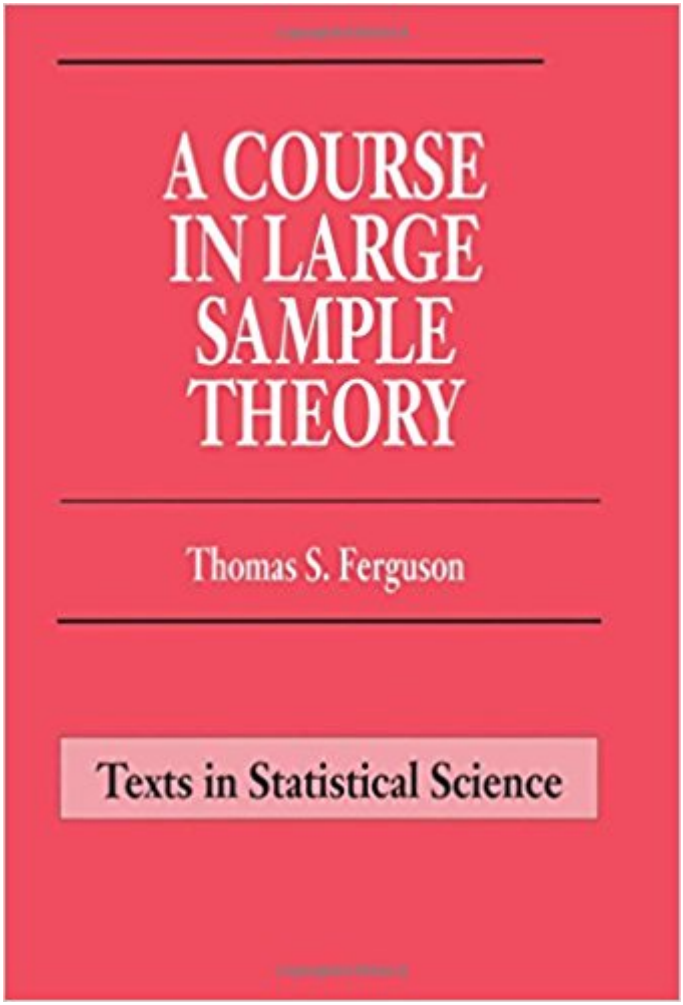
A Course In Large Sample Theory (Chapman & Hall/CRC Texts In Statistical Science)



Synopsis

A Course in Large Sample Theory is presented in four parts. The first treats basic probabilistic notions, the second features the basic statistical tools for expanding the theory, the third contains special topics as applications of the general theory, and the fourth covers more standard statistical topics. Nearly all topics are covered in their multivariate setting.The book is intended as a first year graduate course in large sample theory for statisticians. It has been used by graduate students in statistics, biostatistics, mathematics, and related fields. Throughout the book there are many examples and exercises with solutions. It is an ideal text for self study.

Book Information

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Customer Reviews

Actually quite decent. This is a slim book with concise and clear chapters (so not at all an intimidating tome). Each chapter is followed by a decent number of exercises. Covers standard asymptotic concepts.

I think it is a good book; it has solutions to the problems and it is very useful for a Large Sample Theory class; but it is so dense; it has a small font and it explains so much stuff in a few pages,without any examples...

Too terse for me

I’m currently half-way through Professor Tom Ferguson’s course using this book (learning from the man himself!). We have so far covered the first 14 chapters/sections in 6 weeks. I have to compliment this book on its clarity and flow. The material itself is difficult, but the presentation of material in A Course in Large Sample Theory is as likely as good as it can get in book-form. Having the material presented by a professor is of course ideal but this book is certainly feasible for self-study yet rigorous enough for a first-year graduate course in statistics. There are plenty of (useful) examples in each chapter in addition to explanations. Further, the exercises in the book also have full solutions in the back -- pages 172-235 are the solutions (additional exercises on Professor Ferguson’s website). If any book were to make this material feasible for self-study, it would be this one.For those who want to take this material on for self-study: Pick this book but... this level of this book (ie, the material) is comparable to real analysis but with more direct applications. That is, an individual will succeed in using this book for self-study if (and perhaps only if) she has a good base in analysis and proofs and feels comfortable adapting that knowledge to statistics. An individual with little or no background in analysis proofs will have a very difficult time using this book for self-study. That said, if you want to learn the material, this book would be a prime starting location. If you don’t have a good background in analysis, consider spending some time preparing by running over the theory of limits before engaging this book.For those who are taking a course and are using this book, be happy your professor picked it -- it’s clear and concise. This is a book worth buying. Due to the level of the material, rereading chapters is sometimes necessary but is easily manageable since chapters are concise and include examples.

It is almost impossible not to recommend a book by Professor Ferguson, and this book is no exception. I will deviate slightly from typical book reviewers to mention a few noteworthy things common to Professor Ferguson’s books. First of all, he writes mathematics clearly, concisely, logically, and in an organized manner. He is therefore an exception to the typical mathematics researcher whose writings look like running notes from a gauntlet runner or a gladiator running from a lion in an ancient Roman arena. I first learned graduate statistics from his 1966 book which I believe is titled Decision Theory or Statistical Decision Theory, and that book is as up to date in its information (aside from incorporating intervening studies) as though it were written today. Readers even outside mathematics should demand a reprint of that book if they want to learn real statistics. Professor Ferguson’s character (I have met him) is as honest and open and logical as his books. His books do involve Lebesgue integration, as some other reviewers have mentioned, and I

recommend that even non-statisticians hire a consultant or tutor to either teach them Lebesgue integration or to translate into approximate English or at least elementary mathematical language what Lebesgue integration does. I will try to discuss it myself either in a later addition to this book review or in another book review. My only criticism of Ferguson's books concerns the lack of representation of probabilistic alternatives to Bayesian methods (which I have been developing since 1980) in which, instead of dividing probabilities one substracts them and adds a constant. These have the advantage of being defined even when events have probability zero, unlike (Bayesian) conditional probability, and probability zero events are surprisingly common (e.g., lower dimensional events, extremely rare events assuming continuous random variables, etc.)unlike most people's impression - precisely because of arguments involving Lebesgue type integration. You can find abstracts of some of my papers on this at the Institute for Logic of the University of Vienna (on the internet).

Ferguson has written an excellent book on asymptotic statistics. The theorems and their proofs are as clear as they can be. Measure theory and functional analysis are mostly avoided. Much like Rudin's books (though this one is easier to read), there is little fat and the results appear in a concise and easily remembered and referenced way. It is the most readable book on this topic that I found and is quite enjoyable to read.Regarding its coverage, the book is more elementary than other books such as Asymptotic Statistics by Var der Vaart and is also slightly outdated. A consequence is that some important modern results are missing, for example asymptotics of M estimators, non-parametrics/semi-parametric, local normality. On the other hand, in order to cover these additional topics the book would have to be much longer and contain more advanced math.If you are learning this topic for the first time, I can't think of a better book to read. If, on the other hand, you have already learned asymptotic statistics in some form and wish to learn more advanced and modern material you should probably use a different book.

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