Statistical Design (Springer Texts in Statistics)

George Casella
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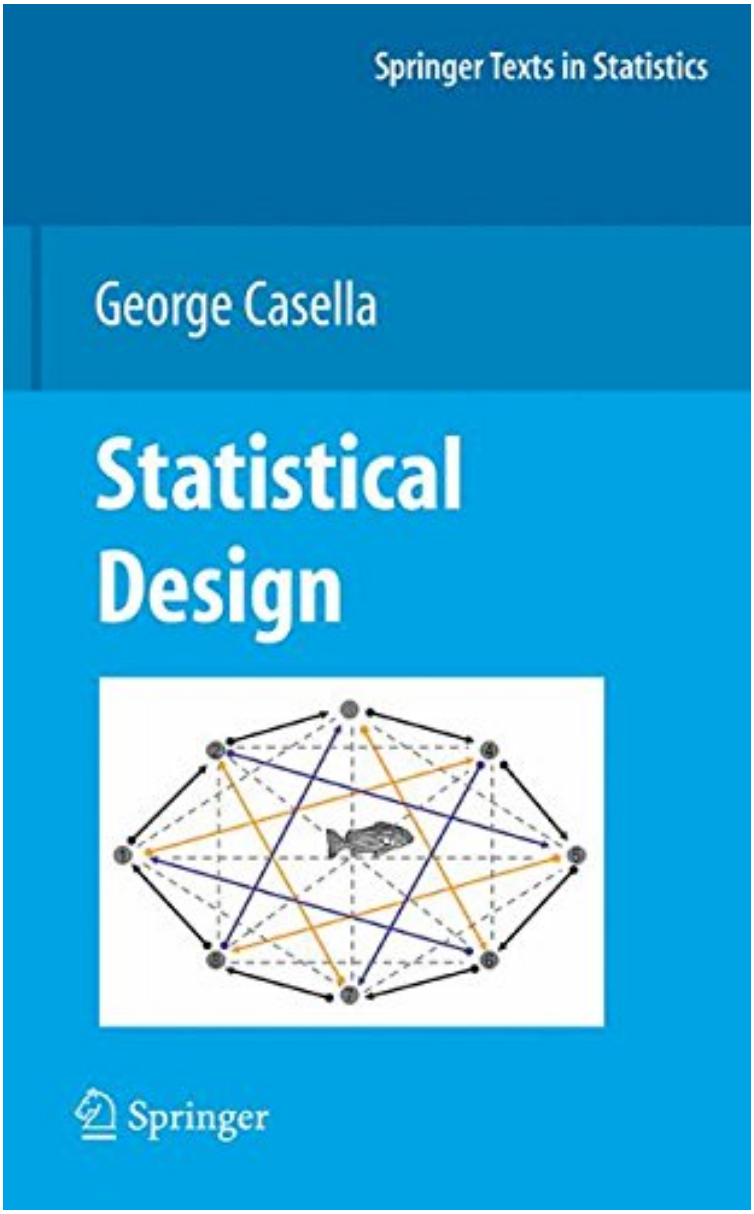

#1869403 in Books Casella George 2008-04-03Original language:EnglishPDF # 1 9.27 x .80 x 6.42l, 1.29 #File Name: 0387759646307 pagesStatistical Design | File size: 73.Mb

George Casella : Statistical Design (Springer Texts in Statistics) before purchasing it in order to gage whether or not it would be worth my time, and all praised Statistical Design (Springer Texts in Statistics):

3 of 3 people found the following review helpful. Full of mistakesBy MirkoI took a class in "Experimental Design" and our professor (actually a former colleague of Casella at Cornell) chose this book after having a brief look on

different books dealing with this topic. However, he and also the whole class suffered from this choice.Although Casella provides a nice view on some aspects (distinction between "Treatment" and "Experiment" Design), this is the first edition of the book and it is full of mistakes! Of course the spelling and grammar mistakes are negliable, but the data-and formula mistakes are not. After reading the book carefully, we recognized that the amount of these mistakes is incredible and lost our trust in the book.Considering this: Definitely not recommendable.10 of 11 people found the following review helpful. very intuitiveBy CustomerI got my PhD in biostatistics and thought I knew pretty well about experimental design until I read this book.If you are looking for a cookbook style information, this is not for you and you will find that the coverage of this book is far from being extensive. However, if you want to UNDERSTAND the principles of statistical design and apply it without rummaging the exactly same design whenever you meet one, you would not find any better book.0 of 9 people found the following review helpful. Promulgates major terminological confusionBy Stuart HurlbertBelow is abstract of my critique of the book that will appear as a Forum piece in Agronomy Journal in early 2013.Abstract: In many disciplines, basic and applied, a high frequency of errors of statistical analysis have been documented in numerous reviews over the decades. One insufficiently appreciated source of this has been the failure of statisticians, individually and collectively, to provide clear definitions for many of the terms they use - and failure to stick with those definitions over time and across disciplines. The field of experimental design is one area where such problems have become acute. I analyze the terminology used in a recent text in that field, Statistical Design by G. Casella, to document the phenomenon, but the problems identified are widespread and of ancient lineage. I show the availability of a clearer, more consistent terminology, most of it well-established more than half a century ago. Key issues commented on are the tripartite structure of the design of an experiment, the need for experimental units to be physically independent of each other, the definition of pseudoreplication, and confusion over the meaning of split unit designs. Problems identified seem to reflect a longstanding conflict between the classical, experiment-oriented approach to design and the model-oriented approach to that topic. Aficionados of the latter have tended to stray from the classical terminology of experimental design, redefining terms in a somewhat casual fashion and thereby considerably confusing non-statisticians in particular.

Statistical design is one of the fundamentals of our subject, being at the core of the growth of statistics during the previous century. In this book the basic theoretical underpinnings are covered. It describes the principles that drive good designs and good statistics. Design played a key role in agricultural statistics and set down principles of good practice, principles that still apply today. Statistical design is all about understanding where the variance comes from, and making sure that is where the replication is. Indeed, it is probably correct to say that these principles are even more important today.

From the reviews:"In an era where many design texts present a wide collection of tools and practical considerations for creating designs, this book is a marked contrast with a primary focus on developing a thorough understanding of the core of design theory. The book is an excellent reference for those already familiar with design of experiments, because of its careful and detailed presentation of core designs and how to verify that an appropriate analysis is chosen to match the structure of how the data were collected. In addition it contains numerous nuggets of wisdom about potential pitfalls from inattention to detail. Overall, the style of the book gives a clear, understandable presentation of the formal details of statistical design for many core design types for balanced data involving categorical factors. The mathematical detail and rigor of the text allows students the opportunity to form a firm foundation on which to build their understanding and intuition about this important area. (Christine ANDERSON-COOK, JASA, June 2009, Vol. 104, No. 486)"The goal is to describe the principles that drive good design, which are also the principles that drive good statistics. Casella succeeds exceptionally well to reach his goals. I greatly enjoyed browsing through this book. The authors experience and writing skills together make this an excellent course book. Concepts are presented in a very reader-friendly and instructive way. The layout of the book, huge amount of examples, and very clear writing make this a book highly recommended for anyone interested in statistical design." (Simo Puntanen, International Statistical , Vol. 76 (3), 2008)"Overall, I found reading this book to be worthwhile. I particularly think the authors discussion of blocking is quite interesting as well as the discussion of loop designs versus balanced incomplete block designs. In fact, I intend to use this book as supplementary reading material for my own design course." (Biometrics, December 2008)The level of this text is for the first or second year graduate students and, the material is about right for a one-semester course. The chapters cover, for the most part, the standard material of a book on designs, with mostly real examples, and applications of designs in real situations. This is an important book permitting to understand statistical designs. (T. Postelnicu, Zentralblatt MATH, Vol. 1181, 2010)This book is a graduate-level text on the design of experiments. It is the product of the authors statistical consulting experience as well as his experience teaching statistical design. It is intended for use in a one-semester course with first- or second-year graduate students who are familiar with standard statistical methods such as analysis of variance (ANOVA), blocking, and multiple regression. is worth considering for a graduate course in design for students with a good mathematical statistics background. (William I. Notz, Mathematical s, Issue 2011 k)This is one of the most simple and clearly written

experimental design books . technical notes at the end of most of the chapters are great ways to let students understand the foundation of the materials conveyed in the book. Readers can quickly search information, discussions, comments, and answers to questions at the end of the chapters. Overall, the book seems thin, but it does include important information about statistical design. I enjoy reading this well-explained book. (Keying Ye, Technometrics, Vol. 52 (4), November, 2010)From the Back CoverAlthough statistical design is one of the oldest branches of statistics, its importance is ever increasing, especially in the face of the data flood that often faces statisticians. It is important to recognize the appropriate design, and to understand how to effectively implement it, being aware that the default settings from a computer package can easily provide an incorrect analysis. The goal of this book is to describe the principles that drive good design, paying attention to both the theoretical background and the problems arising from real experimental situations. Designs are motivated through actual experiments, ranging from the timeless agricultural randomized complete block, to microarray experiments, which naturally lead to split plot designs and balanced incomplete blocks. George Casella is Distinguished Professor in the Department of Statistics at the University of Florida. He is active in many aspects of statistics, having contributed to theoretical statistics in the areas of decision theory and statistical confidence, to environmental statistics, and has more recently concentrated efforts in statistical genomics. He also maintains active research interests in the theory and application of Monte Carlo and other computationally intensive methods. He is listed as an ISI "Highly Cited Researcher." In other capacities, Professor Casella has served as Theory and Methods Editor of the Journal of the American Statistical Association, 1996-1999, Executive Editor of Statistical Science, 2001-2004, and Co-Editor of the Journal of the Royal Statistical Society, Series B, 2009-2012. He has served on the Board of Mathematical Sciences of the National Research Council, 1999-2003, and many committees of both the American Statistical Association and the Institute of Mathematical Statistics. Professor Casella has co-authored five textbooks: Variance Components, 1992; Theory of Point Estimation, Second Edition, 1998; Monte Carlo Statistical Methods, Second Edition, 2004; Statistical Inference, Second Edition, 2001, and Statistical Genomics of Complex Traits, 2007.