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Statistics and Scientific Method: An Introduction for Students and Researchers

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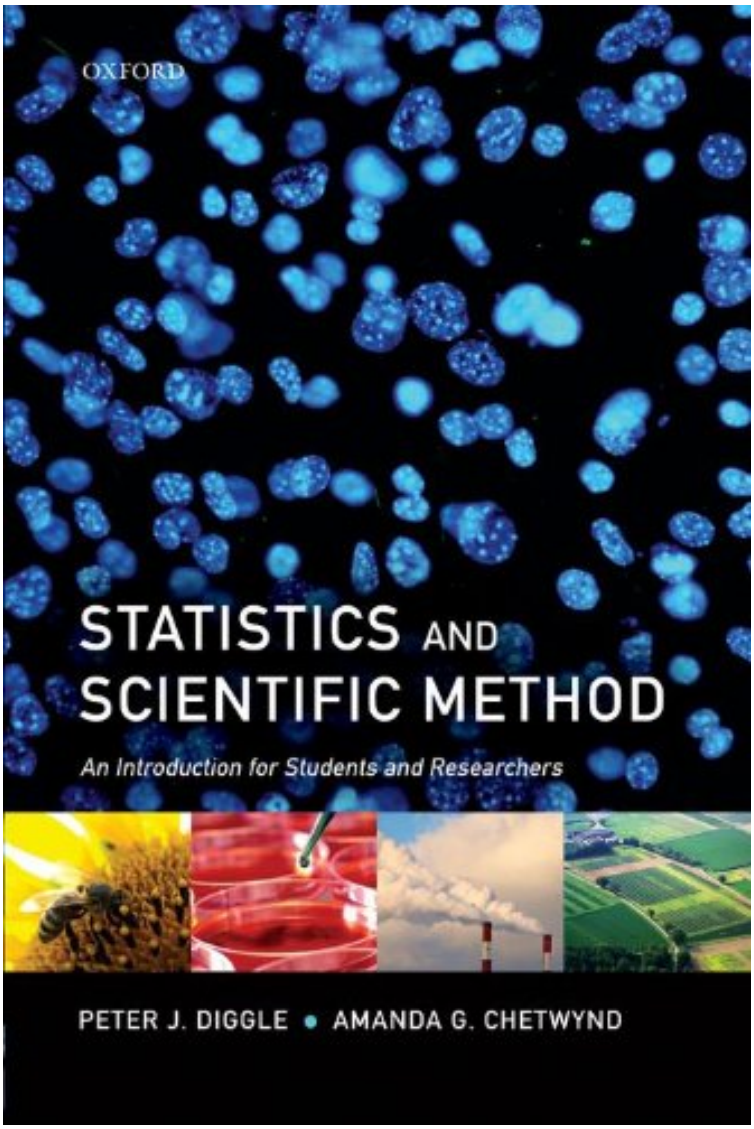

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Peter J. Diggle, Amanda G. Chetwynd : Statistics and Scientific Method: An Introduction for Students and Researchers before purchasing it in order to gage whether or not it would be worth my time, and all praised Statistics and Scientific Method: An Introduction for Students and Researchers:

1 of 1 people found the following review helpful. Good for introductory students in laboratory sciencesBy Marty McFlyI considered adopting this book for an introductory course in political science; I didn't, but that wasn't because

of any failing in the book. As a guide to the analysis of experimental procedures, it is admirable: cleanly written, well-presented with numerous examples, and (perhaps most appealingly) written to be used in conjunction with the R statistical programming language, which is free and widely used. For instructors looking for a comparatively inexpensive and straightforward guide to such topics, I recommend it; certainly, I read it with profit. For instructors in the non-experimental social sciences, this book will prove less useful.

Most introductory statistics text-books are written either in a highly mathematical style for an intended readership of mathematics undergraduate students, or in a recipe-book style for an intended audience of non-mathematically inclined undergraduate or postgraduate students, typically in a single discipline; hence, "statistics for biologists", "statistics for psychologists", and so on.An antidote to technique-oriented service courses, Statistics and Scientific Method is different. It studiously avoids the recipe-book style and keeps algebraic details of specific statistical methods to the minimum extent necessary to understand the underlying concepts. Instead, the text aims to give the reader a clear understanding of how core statistical ideas of experimental design, modelling and data analysis are integral to the scientific method. Aimed primarily at beginning postgraduate students across a range of scientific disciplines (albeit with a bias towards the biological, environmental and health sciences), it therefore assumes some maturity of understanding of scientific method, but does not require any prior knowledge of statistics, or any mathematical knowledge beyond basic algebra and a willingness to come to terms with mathematical notation.Any statistical analysis of a realistically sized data-set requires the use of specially written computer software. An Appendix introduces the reader to our open-source software of choice, R, whilst the book's web-page includes downloadable data and R code that enables the reader to reproduce all of the analyses in the book and, with easy modifications, to adapt the code to analyse their own data if they wish. However, the book is not intended to be a textbook on statistical computing, and all of the material in the book can be understood without using either R or any other computer software.

"This book does strike, the proper balance to meet the requirements of a service course in statistics for researchers and students who have little or no statistical background. The necessary statistical concepts are taught from first principles and the mathematics is deliberately kept simple but used when needed. The R software language is used as students working out even simple problems need a computer for the solution. The book provides web addresses for downloadable data sets and R code to make it possible for the reader to duplicate the results presented in the book. The authors have a nice writing style and explain all the important concepts well." -- Michael R. Chernick, Significance: Statistics Making Sense Mentioned in The American Statistician.About the AuthorPeter Diggle is Distinguished University Professor of Statistics and Associate Dean for Research in the School of Health and Medicine, Lancaster University, Adjunct Professor in the Department of Biostatistics, Johns Hopkins University School of Public Health and Adjunct Senior Researcher in the International Research Institute for Climate and Society, Columbia University. Between 1974 and 1983 he was a Lecturer, then Reader, in Statistics at the University of Newcastle upon Tyne. Between 1984 and 1988 he was Senior, then Principal, then Chief Research Scientist and Chief of the Division of Mathematics and Statistics at CSIRO, Australia. He has published nine books and around 180 articles on these topics in the open literature. He was awarded the Royal Statistical Society's Guy Medal in Silver in 1997, is a former editor of the Society's Journal, Series B and is a Fellow of the American Statistical Association.Amanda Chetwynd is Pro-Vice-Chancellor for the Student Experience and Professor of Mathematics and Statistics at Lancaster University. Before joining Lancaster University she held a Post-Doctoral position in the Mathematics Department at the University of Stockholm. She has published three books and around 80 refereed articles. Amanda was awarded a National Teaching Fellowship in 2003 and in 2005 led Lancaster's successful bid for a Postgraduate Statistics Centre of Excellence in Teaching and Learning.