

## BOOK REVIEW

STATISTICS FOR MATHEMATICIANS—AN INTRODUCTION—D. J. Finney. Published by Oliver & Boyd, Edinburgh and London. pp vi+213. Net Price 63s.

The book is intended as the text for a course of about twenty lectures to students with no previous knowledge of probability or statistics. It introduces students to probability, properties of frequency distributions of observation and of derived statistics, experimental design, estimation and statistical inference. After the introductory ideas of Chapter I, in the second chapter the author introduces a particular problem of experimental science, around which the book is written. The basic notions of probability is introduced in chapter 3. Probability distributions, their properties and uses are the subject matter of chapters 4 and 5. Means, randomness and randomising, and the differences between means are discussed in chapters 6, 7 and 8 respectively. In chapters 9 and 10,  $S^2$ -,  $\chi^2$ - and  $t$ -distributions, and their use are studied. Finally, in the last two chapters the author presents concisely designs of experiments and theory of estimation. It contains an appendix providing details of the mathematical operations which are omitted from the text.

Through, the book is intended to introduce mathematical statistics to every serious student of mathematics, it will be useful to students of experimental sciences particularly for the last two chapters. Frequent reference to the interplay of the biological problems centering the particular problem (in chapter 2) may prove serious limitations on its use, contrary to the expectation of the author.

*N. D. S. G.*

Yes, a working knowledge of elementary calculus is a prerequisite. But the mathematics invoked in the exposition of concepts and theorems are kept as simple as possible while maintaining that modest level of rigor appropriate for an introductory exposition. If you do not have the minimal mathematical prerequisites (such as freshman calculus), blame your instructor or your school for selecting an inappropriate text. But don't blame the authors! I thought the examples and problems were appropriate in their level of difficulty (mostly not so hard) and the relation to the material just covered. A year of calculus, including Taylor Series and multivariable calculus, and an introductory course in linear algebra are prerequisites. This book reflects my view of what a first, and for many students a last, course in statistics should be. Chapter 9 is an introduction to hypothesis testing with particular application to testing for goodness of fit, which ties in with Chapter 8. (This subject is further developed in Chapter 11.) Informal, graphical methods are presented here as well. Several of the last sections of this chapter can be skipped if the instructor is pressed for time. Statistics. Introduction to Statistical Learning. This is a highly recommended book for practicing data scientists. The focus of this book is kept on connecting statistics concepts with machine learning. Hence, you will learn about all popular supervised and unsupervised machine learning algorithms. This is a complete resource to learn application of mathematics. This is a must-read book for intermediate and advanced practitioners in machine learning. This book is written by Luc Devroye, Laszlo Györfi and Gabor Lugosi.