

Preface

The last fifty years have seen a surge in the development of statistical models and methodology for data consisting of lifetimes. This book presents a selection from this area in a coherent form suitable for teaching postgraduate students. In particular, the background and needs of students in India have been kept in mind.

The students are expected to have adequate mastery over calculus and introductory probability theory, including the classical laws of large numbers and central limit theorems. They are also expected to have undergone a basic course in statistical inference. Certain specialized concepts and results such as U-statistics limit theorems are explained in this book itself. Further concepts and results, e.g., weak convergence of processes and martingale central limit theorem, are alluded to and exploited at a few places, but are not considered in depth.

We illustrate the use of many of these methods through the commands of software R. The choice of R was made because it is in public domain and also because the successive commands bring out the stages in the statistical computations. It is hoped that users of statistics will be able to choose methods appropriate for their needs, based on the discussions in this book, and will be able to apply them to real problems and data with the help of the R-commands.

Both the authors have taught courses based on this material at the University of Pune and elsewhere. It is our experience that most of this material can be taught in a one semester course (about 45-50 one hour lectures over 15/16 weeks). Lecture notes prepared by the authors for this course have been in circulation at Pune and elsewhere for several years. Inputs from colleagues and successive batches of students have been useful in finalizing this book. We are grateful to all of them. We also record our appreciation of the support received from our families, friends and all the members of the Department of Statistics, University of Pune.