

Chapman & Hall/CRC

Handbooks of Modern Statistical Methods

Handbook of Design and Analysis of Experiments provides a detailed overview of the tools required for the optimal design of experiments and their analyses. The handbook gives a unified treatment of a wide range of topics, covering the latest developments.

This carefully edited collection of 25 chapters in seven parts synthesizes the state of the art in the theory and applications of designed experiments and their analyses. Written by leading researchers in the field, the chapters offer a balanced blend of methodology and applications.

The first part presents a historical look at experimental design and the fundamental theory of parameter estimation in linear models. The second part deals with settings such as response surfaces and block designs in which the response is modeled by a linear model, the third part covers designs with multiple factors (both treatment and blocking factors), and the fourth part presents optimal designs for generalized linear models, other nonlinear models, and spatial models. The fifth part addresses issues involved in designing various computer experiments. The sixth part explores "cross-cutting" issues relevant to all experimental designs, including robustness and algorithms. The final part illustrates the application of experimental design in recently developed areas.

Features

- Covers many recent advances in the field, including designs for nonlinear models, the design and analysis of computer experiments, and algorithms applicable to a wide variety of design problems
- Describes block designs, crossover and repeated measurement designs, designs for estimating response surfaces, optimal designs for linear models, fractional factorial designs, multifactor designs, spatial models, and more
- Explores the extensive use of experimental designs in marketing, the pharmaceutical industry, engineering, medicine, and other areas
- Provides further reading suggestions on related topics



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