



METADATA

Title: Linear Models and Design & Analysis of Experiments

Other Titles: with applications in R and Minitab

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Abstract

This book intends to be used as a textbook for students whose field of study is Statistics, Experimental Design, and Data Analysis, as well as for students who study sciences where Statistics is a basic tool of (Statistical) Analysis while at the same time, it can be a useful tool for the Applied Researcher (Practitioner) in a plethora of scientific fields where Statistics is applied, including Management Science, Health Sciences, Socio-Economic Sciences, Engineering Sciences, Agricultural, and Geophysical Sciences, etc. This textbook can be used both in higher undergraduate as well as in a postgraduate level course and requires basic knowledge of statistical inference (estimation and hypothesis tests). The material covers Regression

Analysis (6 chapters), Analysis of Variance and Design & Analysis of Experiments (4 chapters), and an Introductory chapter on Generalized Linear Models. Among the chapters, the following topics are included and thoroughly discussed: Simple and Multiple Linear Regression, Diagnostic Tests for the Assessment of Regression Analysis Assumptions, Factorial Designs, Fractional Factorial Designs, Latin Squares Designs, Randomized Block Designs, an Introduction to Generalized Linear Models and two chapters on Special Topics in Regression and Analysis of Variance. Each chapter is accompanied by applications in R and/or Minitab, Self-Assessment Exercises, as well as unsolved Exercises which aim to cover the entire range of the material.