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Nota di contenuto	Cover; Statistics and Probability for Engineering Applications; Copyright Page; Contents; Preface; List of Symbols; Chapter 1. Introduction: Probability and Statistics; 1.1 Some Important Terms; 1.2 What does this book contain?; Chapter 2. Basic Probability; 2.1 Fundamental Concepts; 2.2 Basic Rules of Combining Probabilities; 2.3 Permutations and Combinations; 2.4 More Complex Problems: Bayes' Rule; Chapter 3. Descriptive Statistics: Summary Numbers; 3.1 Central Location; 3.2 Variability or Spread of the Data; 3.3 Quartiles, Deciles, Percentiles, and Quantiles 3.4 Using a Computer to Calculate Summary NumbersChapter 4. Grouped Frequencies and Graphical Descriptions; 4.1 Stem-and-Leaf Displays; 4.2 Box Plots; 4.3 Frequency Graphs of Discrete Data; 4.4 Continuous Data: Grouped Frequency; 4.5 Use of Computers; Chapter 5. Probability Distributions of Discrete Variables; 5.1 Probability Functions and Distribution Functions; 5.2 Expectation and Variance; 5.3 Binomial Distribution; 5.4 Poisson Distribution; 5.5 Extension: Other Discrete Distributions; 5.6 Relation Between Probability Distributions and Frequency Distributions Chapter 6. Probability Distributions of Continuous Variables6.1 Probability from the Probability Density Function; 6.2 Expected Value and Variance; 6.3 Extension: Useful Continuous Distributions; 6.4

Extension: Reliability; Chapter 7. The Normal Distribution; 7.1 Characteristics; 7.2 Probability from the Probability Density Function; 7.3 Using Tables for the Normal Distribution; 7.4 Using the Computer; 7.5 Fitting the Normal Distribution to Frequency Data; 7.6 Normal Approximation to a Binomial Distribution; 7.7 Fitting the Normal Distribution to Cumulative Frequency Data  
7.8 Transformation of Variables to Give a Normal Distribution  
Chapter 8. Sampling and Combination of Variables; 8.1 Sampling; 8.2 Linear Combination of Independent Variables; 8.3 Variance of Sample Means; 8.4 Shape of Distribution of Sample Means: Central Limit Theorem;  
Chapter 9. Statistical Inferences for the Mean; 9.1 Inferences for the Mean when Variance Is Known; 9.2 Inferences for the Mean when Variance Is Estimated from a Sample; Chapter 10. Statistical Inferences for Variance and Proportion; 10.1 Inferences for Variance; 10.2 Inferences for Proportion  
Chapter 11. Introduction to Design of Experiments  
11.1 Experimentation vs. Use of Routine Operating Data; 11.2 Scale of Experimentation; 11.3 One-factor-at-a-time vs. Factorial Design; 11.4 Replication; 11.5 Bias Due to Interfering Factors; 11.6 Fractional Factorial Designs; Chapter 12. Introduction to Analysis of Variance; 12.1 One-way Analysis of Variance; 12.2 Two-way Analysis of Variance; 12.3 Analysis of Randomized Block Design; 12.4 Concluding Remarks;  
Chapter 13. Chi-squared Test for Frequency Distributions; 13.1 Calculation of the Chi-squared Function; 13.2 Case of Equal Probabilities  
13.3 Goodness of Fit

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## Sommario/riassunto

More than ever, American industry- especially the semiconductor industry- is using statistical methods to improve its competitive edge in the world market. It is becoming more imperative that graduate engineers have solid statistical know-how, yet engineers in industry typically are not well-prepared to use statistics and they are fuzzy about how to apply statistical tools and techniques. This valuable reference makes statistical methods easier and more accessible to engineers. Although the book can be read sequentially, like a normal textbook, it is designed to be used as a handboo

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