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Nota di contenuto	Practical Reliability Engineering; Contents; Preface to the First Edition; Preface to the Second Edition; Preface to the Third Edition; Preface to the Third Edition Revised; Preface to the Fourth Edition; Preface to the Fifth Edition; Acknowledgements; 1 Introduction to Reliability Engineering; 1.1 What is Reliability Engineering?; 1.2 Why Teach Reliability Engineering?; 1.3 Why Do Engineering Products Fail?; 1.4 Probabilistic Reliability; 1.5 Repairable and Non-Repairable Items; 1.6 The Pattern of Failures with Time (Non-Repairable Items) 1.7 The Pattern of Failures with Time (Repairable Items)1.8 The Development of Reliability Engineering; 1.9 Courses, Conferences and

Literature; 1.10 Organizations Involved in Reliability Work; 1.11 Reliability as an Effectiveness Parameter; 1.12 Reliability Programme Activities; 1.13 Reliability Economics and Management; Questions; Bibliography; 2 Reliability Mathematics; 2.1 Introduction; 2.2 Variation; 2.3 Probability Concepts; 2.4 Rules of Probability; 2.5 Continuous Variation; 2.6 Continuous Distribution Functions; 2.7 Summary of Continuous Statistical Distributions
 2.8 Variation in Engineering 2.9 Conclusions; 2.10 Discrete Variation; 2.11 Statistical Confidence; 2.12 Statistical Hypothesis Testing; 2.13 Non-Parametric Inferential Methods; 2.14 Goodness of Fit; 2.15 Series of Events (Point Processes); 2.16 Computer Software for Statistics; 2.17 Practical Conclusions; Questions; Bibliography; 3 Life Data Analysis and Probability Plotting; 3.1 Introduction; 3.2 Life Data Classification; 3.3 Ranking of Data; 3.4 Weibull Distribution; 3.5 Computerized Data Analysis and Probability Plotting; 3.6 Confidence Bounds for Life Data Analysis
 3.7 Choosing the Best Distribution and Assessing the Results 3.8 Conclusions; Questions; Bibliography; 4 Monte Carlo Simulation; 4.1 Introduction; 4.2 Monte Carlo Simulation Basics; 4.3 Additional Statistical Distributions; 4.4 Sampling a Statistical Distribution; 4.5 Basic Steps for Performing a Monte Carlo Simulation; 4.6 Monte Carlo Method Summary; Questions; Bibliography; 5 Load-Strength Interference; 5.1 Introduction; 5.2 Distributed Load and Strength; 5.3 Analysis of Load-Strength Interference; 5.4 Effect of Safety Margin and Loading Roughness on Reliability (Multiple Load Applications)
 5.5 Practical Aspects Questions; Bibliography; 6 Reliability Prediction and Modelling; 6.1 Introduction; 6.2 Fundamental Limitations of Reliability Prediction; 6.3 Standards Based Reliability Prediction; 6.4 Other Methods for Reliability Predictions; 6.5 Practical Aspects; 6.6 Systems Reliability Models; 6.7 Availability of Repairable Systems; 6.8 Modular Design; 6.9 Block Diagram Analysis; 6.10 Fault Tree Analysis (FTA); 6.11 State-Space Analysis (Markov Analysis); 6.12 Petri Nets; 6.13 Reliability Apportionment; 6.14 Conclusions; Questions; Bibliography; 7 Design for Reliability
 7.1 Introduction

Sommario/riassunto

"Maintaining the academic and practical level of the Fourth Edition, while keeping up with modern reliability practices as evolve, this new edition presents the latest reliability software packages; has an expanded section on Weibull distribution, the most commonly used distribution in reliability mathematics; and includes PowerPoint slides and solutions for course tutors held on a companion website. It is an essential text for experienced design and reliability engineers, as well as engineers studying for CRE, ASQ or IQA certification and graduate or senior undergraduate students in quality assurance or reliability"--
