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| | Edizione | [2nd ed. 2020.] |
| | Descrizione fisica | 1 online resource (xi, 180 pages 110 illustrations, 56 illustrations in colour) |
| | Disciplina | 624 |
| | Soggetti | Quality control <br> Reliability <br> Industrial safety <br> Fire prevention <br> Buildings—Design and construction <br> Building <br> Construction <br> Engineering, Architectural <br> Applied mathematics <br> Engineering mathematics <br> Quality Control, Reliability, Safety and Risk <br> Fire Science, Hazard Control, Building Safety <br> Building Construction and Design <br> Mathematical and Computational Engineering |
| | Lingua di pubblicazione | Inglese |
| | Formato | Materiale a stampa |
| | Livello bibliografico | Monografia |
| | Nota di bibliografia | Includes bibliographical references and index. |
| | Nota di contenuto | Introduction -- Data Analysis/Sample Statistics -- Elementary Probability and Set Theory -- Random Variables and Probability Distributions -- Functions of Random Variables: Error Propagation -- Component Reliability Analysis -- System Reliability Analysis -- Introduction to Decision Analysis -- Reliability-Based Codes (LRFD) -- Spatial Variability -- Bayesian Updating -- References -- Appendix A -- Appendix B -- Appendix C. |

**Sommario/riassunto**

This updated edition retains its introduction to applied fundamental statistics, probability, reliability, and decision theory as these pertain to problems in Civil Engineering. The new edition adds an expanded treatment of systems reliability, Bayesian methods, and spatial variabililty, along with additional example problems throughout. The book provides readers with the tools needed to determine the probability of failure, and when multiplied by the consequences of failure, illustrates how to assess the risk of civil engineering problems. Presenting methods for quantifying uncertainty that exists in engineering analysis and design, with an emphasis on fostering more accurate analysis and design, the text is ideal for students and practitioners of a range of civil engineering disciplines. Expands on the class-tested pedagogy from the first edition with more material and more examples; Broadens understanding with simulations coded both in Matlab and in R; Features new chapters on spatial variability and Bayesian methods; Emphasizes techniques for estimating the influence of uncertainty on the probability of failure.