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| Record Nr. | UNINA9910360854903321 |
| Autore | Bas Esra |
| Titolo | Basics of Probability and Stochastic Processes / / by Esra Bas |
| Pubbl/distr/stampa | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019 |
| ISBN | 3-030-32323-4 |
| Edizione | [1st ed. 2019.] |
| Descrizione fisica | 1 online resource (IX, 307 p.) |
| Disciplina | 519.2 |
| Soggetti | Markov processes |
| | Engineering mathematics |
| | Combinatorics |
| | Quality control |
| | Reliability |
| | Industrial safety |
| | Markov model |
| | Engineering Mathematics |
| | Quality Control, Reliability, Safety and Risk |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Combinatorial Analysis -- Basic Concepts in Probability -- Conditional Probability, Bayes's Formula, Independent Events -- Introduction to Random Variables -- Discrete Random Variables -- Continuous Random Variables -- Other Selected Topics in Basic Probability -- A Brief Introduction to Stochastic Processes -- A Brief Introduction to Point Process, Counting Process, Renewal Process, Regenerative Process, Poisson Process -- Poisson Process -- Renewal Process -- An Introduction to Markov Chains -- Special Discrete-Time Markov Chains -- Continuous-Time Markov Chains -- An Introduction to Queueing Models -- Introduction to Brownian Motion -- Basics of Martingales -- Basics of Reliability Theory. |
| Sommario/riassunto | This textbook explores probability and stochastic processes at a level that does not require any prior knowledge except basic calculus. It presents the fundamental concepts in a step-by-step manner, and |

offers remarks and warnings for deeper insights. The chapters include basic examples, which are revisited as the new concepts are introduced. To aid learning, figures and diagrams are used to help readers grasp the concepts, and the solutions to the exercises and problems. Further, a table format is also used where relevant for better comparison of the ideas and formulae. The first part of the book introduces readers to the essentials of probability, including combinatorial analysis, conditional probability, and discrete and continuous random variable. The second part then covers fundamental stochastic processes, including point, counting, renewal and regenerative processes, the Poisson process, Markov chains, queuing models and reliability theory. Primarily intended for undergraduate engineering students, it is also useful for graduate-level students wanting to refresh their knowledge of the basics of probability and stochastic processes.