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   Titolo   Introduction to Queueing Systems with Telecommunication Applications / / by Laszlo Lakatos, Laszlo Szeidl, Miklos Telek

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   Descrizione fisica 1 online resource (387 p.)

   Disciplina   519.82

   Soggetti   Probabilities
                       Operations research
                       Management science
                       Computer system failures
                       Electrical engineering
                       Probability Theory and Stochastic Processes
                       Operations Research, Management Science
                       System Performance and Evaluation
                       Communications Engineering, Networks

   Lingua di pubblicazione Inglese

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   Livello bibliografico Monografia

   Note generali   Description based upon print version of record.

   Nota di bibliografia Includes bibliographical references & index.

   Nota di contenuto   Preface -- Introduction to probability theory -- Introduction to stochastic processes -- Markov chains -- Renewal and regenerative processes -- Markov chains with special structures -- Introduction to queueing systems -- Markovian queueing systems -- Non-Markovian queueing systems -- Queueing systems with structured Markov chains -- Queueing networks -- Applied queueing systems -- Functions and transforms -- Exercises -- References.-.

   Sommario/riassunto The book is composed of two main parts: mathematical background and queueing systems with applications. The mathematical background is a self containing introduction to the stochastic processes of the later studies queueing systems. It starts with a quick introduction to probability theory and stochastic processes and continues with chapters on Markov chains and regenerative processes. More recent advances of queueing systems are based on phase type distributions,

Markov arrival processes and quasy birth death processes, which are introduced in the last chapter of the first part. The second part is devoted to queueing models and their applications. After the introduction of the basic Markovian (from M/M/1 to M/M/1//N) and non-Markovian (M/G/1, G/M/1) queueing systems, a chapter presents the analysis of queues with phase type distributions, Markov arrival processes (from PH/M/1 to MAP/PH/1/K). The next chapter presents the classical queueing network results and the rest of this part is devoted to the application examples. There are queueing models for bandwidth charing with different traffic classes, slotted multiplexers, ATM switches, media access protocols like Aloha and IEEE 802.11b, priority systems and retrial systems. An appendix supplements the technical content with Laplace and z transformation rules, Bessel functions and a list of notations. The book contains examples and exercises throughout and could be used for graduate students in engineering, mathematics and sciences.