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	ISBN	3-030-60515-9
	Edizione	[1st ed. 2021.]
	Descrizione fisica	1 online resource (X, 352 p. 275 illus., 48 illus. in color.)
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	Soggetti	Electronic circuits - Mathematical models Engineering mathematics
	Lingua di pubblicazione	Inglese
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	Nota di contenuto	Introduction -- Voltage, Current, and Resistance -- DC Power Supply and Multimeters -- Ohm's Law -- Kirchhoff's Voltage Law (KVL) -- Kirchhoff's Current Law (KCL) -- Resistors in Series and in Parallel -- Voltage Divider and Current Divider -- Node-Voltage Method -- Mesh-Current Method -- Superposition -- Thévenin Equivalent -- Norton Equivalent -- Maximum Power Transfer -- Operational Amplifiers -- Inductors -- Capacitors -- Analysis of a Circuit by Solving Differential Equations -- First-Order Circuits -- Sinusoidal Steady-State -- Function Generators and Oscilloscopes -- Mutual Inductance and Transformers -- Fourier Series -- Laplace Transform in Circuit Analysis -- Fourier Transform in Circuit Analysis -- Second-Order Circuits -- Filters -- Wrapping Up.
	Sommario/riassunto	This textbook serves as a tutorial for engineering students. Fundamental circuit analysis methods are presented at a level accessible to students with minimal background in engineering. The emphasis of the book is on basic concepts, using mathematical equations only as needed. Analogies to everyday life are used throughout the book in order to make the material easier to understand. Even though this book focuses on the fundamentals, it reveals the authors' deep insight into the relationship between the phasor, Fourier transform, and Laplace transform, and explains to students why these transforms are employed in circuit analysis. Written

to be used as a "personal tutor" for a college student who is taking a lower level electric circuits course; Focuses on one concept per chapter, using numerous solved examples to make the presentation simple, concise, clear and to the point; Explains concepts from a "bird's-eye view" so readers can grasp how concepts fit into a larger context; Covers practical, hands-on topics, such as how to use a multimeter, how to use an oscilloscope, and how to use a power supply; Includes exercises at the end of each chapter with detailed, step-by-step solutions at the end of the book, making this an ideal tool for self-study.