Essential Circuit Analysis using NI Multisimâ¢ and MATLABÂ® [

Asadi, Farzin.,
author.
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http://id.loc.gov/vocabulary/relators/aut

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Monografía

This textbook provides a compact but comprehensive treatment that guides students through the analysis of circuits, using NI Multisimâ¢ and MATLABÂ®. Ideal as a hands-on source for courses in Electric Circuits, Electronics, Digital Logic and Power Electronics this text focuses on solving problems using market-standard software, corresponding to all key concepts covered in the classroom. The author uses his extensive classroom experience to guide students toward deeper understanding of key concepts, while they gain facility with software they will need to master for later studies and practical use in their engineering careers. Serves as a hands-on complement to texts for Electric Circuits I/II, Electronics I/II, Digital Logic and Power Electronics; Covers both NI Multisimâ¢ and MATLABÂ®; Filled with examples that students will see throughout the typical course, solved with market-standard software; Includes exercises for each chapter, to reinforce concepts and techniques introduced.

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Contenido: Essentials of MATLABÂ®: basic operations on real numbers; operations on complex numbers; differentiation/integration; roots of equations; solution of ordinary differential equations; Fast Fourier Transform (FFT), drawing different types of graphs; control statements; optimization -- Essentials of SimulinkÂ®: modelling of dynamical systems; circuit analysis -- Essentials of Multisimâ¢: basic resistive circuits; first and second order

circuits; diode circuits (clamp circuit, rectifier, etc); amplifiers (common base/emitter/collector, differential); calculation of gain, frequency response, etc.); op-amp circuits (Filters, amplifiers, oscillators); transmission lines and digital circuits.

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