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Sommario/riassunto	The book contains a unitary and systematic presentation of both classical and very recent parts of a fundamental branch of functional analysis: linear semigroup theory with main emphasis on examples and applications. There are several specialized, but quite interesting, topics which didn't find their place into a monograph till now, mainly because they are very new. So, the book, although containing the main parts of the classical theory of $C_0$ -semigroups, as the Hille-Yosida theory, includes also several very new results, as for instance those referring to various classes of semigroups such as equicontinuous, compact, differentiable, or analytic, as well as to some nonstandard types of partial differential equations, i.e. elliptic and parabolic systems with dynamic boundary conditions, and linear or semilinear differential equations with distributed (time, spatial) measures. Moreover, some finite-dimensional-like methods for certain semilinear pseudo-parabolic, or hyperbolic equations are also discussed. Among the most interesting applications covered are not only the standard ones concerning the Laplace equation subject to either Dirichlet, or Neumann boundary conditions, or the Wave, or Klein-Gordon equations, but also those referring to the Maxwell equations, the equations of Linear Thermoelasticity, the equations of Linear Viscoelasticity, to list only a few. Moreover, each chapter contains a set of various problems, all of them completely solved and

explained in a special section at the end of the book.<P> The book is primarily addressed to graduate students and researchers in the field, but it would be of interest for both physicists and engineers. It should be emphasised that it is almost self-contained, requiring only a basic course in Functional Analysis and Partial Differential Equations

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