1. Record Nr.   UNINA9910299945103321

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Titolo	Complements of Higher Mathematics / / by Marin Marin, Andreas Öchsner
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018
ISBN	3-319-74684-7
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (352 pages)
Disciplina	515.84
Soggetti	Engineering mathematics Mathematical optimization Calculus of variations Mathematical physics Engineering Mathematics Calculus of Variations and Optimization Mathematical Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Complex Functions -- Special Functions -- Operational Calculus -- Fourier's Transform -- Calculus of Variations -- Quasi-linear Equations -- Hyperbolical Equations -- Parabolic Equations -- Elliptic Partial Differential Equations -- Optimal Control.
Sommario/riassunto	This book highlights the remarkable importance of special functions, operational calculus, and variational methods. A considerable portion of the book is dedicated to second-order partial differential equations, as they offer mathematical models of various phenomena in physics and engineering. The book provides students and researchers with essential help on key mathematical topics, which are applied to a range of practical problems. These topics were chosen because, after teaching university courses for many years, the authors have found them to be essential, especially in the contexts of technology, engineering and economics. Given the diversity topics included in the book, the presentation of each is limited to the basic notions and results of the respective mathematical domain. Chapter 1 is devoted to

complex functions. Here, much emphasis is placed on the theory of holomorphic functions, which facilitate the understanding of the role that the theory of functions of a complex variable plays in mathematical physics, especially in the modeling of plane problems. In addition, the book demonstrates the importance of the theories of special functions, operational calculus, and variational calculus. In the last chapter, the authors discuss the basic elements of one of the most modern areas of mathematics, namely the theory of optimal control.