1.	Record Nr.	UNINA9910960442503321
	Autore	Megginson Robert E.
	Titolo	An Introduction to Banach Space Theory / / by Robert E. Megginson
	Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 1998
	ISBN	1-4612-0603-0
	Edizione	[1st ed. 1998.]
	Descrizione fisica	1 online resource (XIX, 599 p.)
	Collana	Graduate Texts in Mathematics, , 2197-5612 ; ; 183
	Disciplina	515
	Soggetti	Mathematical analysis Mathematical physics Analysis Mathematical Methods in Physics Theoretical, Mathematical and Computational Physics
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Bibliographic Level Mode of Issuance: Monograph
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	1 Basic Concepts -- 1.1 Preliminaries -- 1.2 Norms -- 1.3 First Properties of Normed Spaces -- 1.4 Linear Operators Between Normed Spaces -- 1.5 Baire Category -- 1.6 Three Fundamental Theorems -- 1.7 Quotient Spaces -- 1.8 Direct Sums -- 1.9 The Hahn-Banach Extension Theorems -- 1.10 Dual Spaces -- 1.11 The Second Dual and Reflexivity -- 1.12 Separability -- 1.13 Characterizations of Reflexivity -- 2 The Weak and Weak Topologies -- 2.1 Topology and Nets -- 2.2 Vector Topologies -- 2.3 Metrizable Vector Topologies -- 2.4 Topologies Induced by Families of Functions -- 2.5 The Weak Topology -- 2.6 The Weak Topology -- 2.7 The Bounded Weak Topology -- 2.8 Weak Compactness -- 2.9 James's Weak Compactness Theorem -- 2.10 Extreme Points -- 2.11 Support Points and Subreflexivity -- 3 Linear Operators -- 3.1 Adjoint Operators -- 3.2 Projections and Complemented Subspaces -- 3.3 Banach Algebras and Spectra -- 3.4 Compact Operators -- 3.5 Weakly Compact Operators -- 4 Schauder Bases -- 4.1 First Properties of Schauder Bases -- 4.2 Unconditional Bases -- 4.3 Equivalent Bases -- 4.4 Bases and Duality -- 4.5 James's Space J -- 5 Rotundity and Smoothness -- 5.1 Rotundity -- 5.2 Uniform Rotundity -- 5.3 Generalizations of Uniform Rotundity -- 5.4 Smoothness -- 5.5 Uniform Smoothness -- 5.6 Generalizations of

Uniform Smoothness -- A Prerequisites -- B Metric Spaces -- D Ultranets -- References -- List of Symbols.

Sommario/riassunto	Many important reference works in Banach space theory have appeared since Banach's "Théorie des Opérations Linéaires", the impetus for the development of much of the modern theory in this field. While these works are classical starting points for the graduate student wishing to do research in Banach space theory, they can be formidable reading for the student who has just completed a course in measure theory and integration that introduces the L_p spaces and would like to know more about Banach spaces in general. The purpose of this book is to bridge this gap and provide an introduction to the basic theory of Banach spaces and functional analysis. It prepares students for further study of both the classical works and current research. It is accessible to students who understand the basic properties of L_p spaces but have not had a course in functional analysis. The book is sprinkled liberally with examples, historical notes, and references to original sources. Over 450 exercises provide supplementary examples and counterexamples and give students practice in the use of the results developed in the text.