Record Nr. UNINA9910299987203321 Autore **Bowers Adam** Titolo An Introductory Course in Functional Analysis / / by Adam Bowers, Nigel J. Kalton New York, NY:,: Springer New York:,: Imprint: Springer,, 2014 Pubbl/distr/stampa **ISBN** 1-4939-1945-8 Edizione [1st ed. 2014.] Descrizione fisica 1 online resource (XVI, 232 p. 2 illus.) Collana Universitext, , 0172-5939 Disciplina 515.7 Soggetti Functional analysis **Functional Analysis** 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 Foreword -- Preface -- 1 Introduction. - 2 Classical Banach spaces and their duals -- 3 The Hahn-Banach theorems.- 4 Consequences of completeness -- 5 Consequences of convexity -- 6 Compact operators and Fredholm theory -- 7 Hilbert space theory -- 8 Banach algebras --A Basics of measure theory -- B Results from other areas of mathematics -- References -- Index. Sommario/riassunto Based on a graduate course by the celebrated analyst Nigel Kalton, this well-balanced introduction to functional analysis makes clear not only how, but why, the field developed. All major topics belonging to a first course in functional analysis are covered. However, unlike traditional introductions to the subject, Banach spaces are emphasized over Hilbert spaces, and many details are presented in a novel manner, such as the proof of the Hahn–Banach theorem based on an inf-convolution technique, the proof of Schauder's theorem, and the proof of the Milman-Pettis theorem. With the inclusion of many illustrative examples and exercises, An Introductory Course in Functional Analysis equips the

reader to apply the theory and to master its subtleties. It is therefore well-suited as a textbook for a one- or two-semester introductory course in functional analysis or as a companion for independent study.