1. Record Nr. UNINA9910349470903321 Autore McLennan Andrew Titolo Advanced Fixed Point Theory for Economics / / by Andrew McLennan Singapore:,: Springer Singapore:,: Imprint: Springer,, 2018 Pubbl/distr/stampa **ISBN** 9789811307102 981-13-0710-5 Edizione [1st ed. 2018.] Descrizione fisica 1 online resource (XX, 432 p. 18 illus.) Disciplina 330.1 Soggetti **Economics** Game theory Economic Theory/Quantitative Economics/Mathematical Methods Game Theory, Economics, Social and Behav. Sciences Lingua di pubblicazione Inglese Materiale a stampa **Formato** Livello bibliografico Monografia Nota di contenuto Chapter 1 Introduction and Summary -- Part I Topological Methods --Chapter 2 Planes, Polyhedra, and Polytopes -- Chapter 3 Computing Fixed Points -- Chapter 4 Topologies on Spaces of Sets -- Chapter 5 Topologies on Functions and Correspondences -- Chapter 6 Metric Space Theory -- Chapter 7 Retracts -- Chapter 8 Essential Sets of Fixed Points -- Chapter 9 Approximation of Correspondences -- Part II Smooth Methods -- Chapter 10 Differentiable Manifolds -- Chapter 11 Sard's Theorem -- Chapter 12 Degree Theory -- Chapter 13 The Fixed Point Index -- Part III Applications and Extensions -- Chapter 14 Topological Consequences -- Chapter 15 Vector Fields and their Equilibria. This book develops the central aspect of fixed point theory – the Sommario/riassunto topological fixed point index – to maximal generality, emphasizing correspondences and other aspects of the theory that are of special interest to economics. Numerous topological consequences are presented, along with important implications for dynamical systems. The book assumes the reader has no mathematical knowledge beyond that which is familiar to all theoretical economists. In addition to

making the material available to a broad audience, avoiding algebraic topology results in more geometric and intuitive proofs. Graduate

students and researchers in economics, and related fields in mathematics and computer science, will benefit from this book, both as a useful reference and as a well-written rigorous exposition of foundational mathematics. Numerous problems sketch key results from a wide variety of topics in theoretical economics, making the book an outstanding text for advanced graduate courses in economics and related disciplines.