Górniewicz, Lech
Topological fixed point theory of multivalued mappings. 2nd ed. (English) Zbl 1107.55001
Topological Fixed Point Theory and Its Applications 4. Dordrecht: Springer (ISBN 1-4020-4665-0/hbk;
1-4020-4666-9/ebook). x, 538 p. (2006).

This is the second edition of the book *Topological Fixed Point Theory of Multivalued Mappings*. The
review of the first edition was done by R. F. Brown, see [Topological fixed point theory of multivalued
mappings. Mathematics and its Applications (Dordrecht). 495. Dordrecht: Kluwer Academic Publishers.
(1999; Zbl 0937.55001)], and most of it still applies. This new editon contains 7 chapters, and the seventh
is new. It is called *Recent results* and it follows the same style as the previous ones.

Although the first 6 chapters were already in the first edition, several changes and general improvements
were made, and the new chapter is a nice contribution. It provides a fair complete update of the devel-
opment of the subject in the past 6 years. It consists of 10 subsections which are: 76: *Periodic invariants;
the Euler-Poincaré characteristic*; 77: *The coincidence Nielsen number*; 78: *Fixed point of symmetric
product mappings*; 79: *The category of weighted maps*; 80: *Darbo homology functor and its applications
to fixed point problems*; 81: *More about spheric mappings*; 82: *A coincidence index involving Fredholm
operators*; 83: *Fixed points of monotone-type multivalued operators*; 84: *Multivalued Poincaré operators*;
85:*Multivalued fractals*. Some of the subsections generalize classical topics, already known for functions, to
multivalued functions. Others are devoted to further results on multivalued functions. This last chapter
is less self-contained than the others, which is not surprising.

In the new chapter the reader should watch out for some misprints, especially in subsection 82: *A coin-
cidence index involving Fredholm operators*. One of the problems pointed out in the review of the first
edition still remains, namely, the lack of an adequate index.

Reviewer: Daciberg Gonçalves (São Paulo)

MSC:

55M20	Fixed points and coincidences in algebraic topology
54H25	Fixed-point and coincidence theorems (topological aspects)
47H10	Fixed-point theorems

Cited in **2** Reviews
Cited in **99** Documents

Keywords:

multivalued mappings; fixed point index; approximation methods; operators

Full Text: DOI