Around compact (semi)topological semigroups

Oleg Gutik

(National University of Lviv, Universytetska 1, Lviv, 79000, Ukraine)

E-mail: `o_gutik@franko.lviv.ua`, `ovgutik@yahoo.com`

In my lectures I plan to make a survey on compact (and compact-like) topological and semitopological semigroups. This course based on classical books on the theory of topological semigroups [1, 2, 4], the surveys [3, 5] and new results on this direction.

My lectures will be devoted to the following topics:

- topologization of semigroups;
- the structure of the kernel of a compact topological semigroup;
- embedding of semigroups into compact topological semigroups;
- simple and 0-simple compact and compact-like topological semigroups;
- the structure of some classes of a compact and compact-like topological semigroup;
- the continuity of inversion in compact-like topological semigroups.

Also we shall present some new results on the topics of the lectures.

References

[1] J. H. Carruth, J. A. Hildebrant, and R. J. Koch, *The Theory of Topological Semigroups*, Vol. I, Marcel Dekker, Inc., New York and Basel, 1983; Vol. II, Marcel Dekker, Inc., New York and Basel, 1986.

[2] K. H. Hofmann, and P. S. Mostert, *Elements of Compact Semigroups*, Charles E. Merril Books, Inc., Columbus, Ohio, 1966.

[3] P. S. Mostert, *The structure of topological semigroups – revisited*, Bull. Amer. Math. Soc. **72** (1966), 601–618.

[4] A. B. Paalman-de Miranda, *Topological Semigroups*, Mathematical Centre Tracts, 11 Mathematisch Centrum, Amsterdam, 1964.

[5] A. D. Wallace, *The structure of topological semigroups*, Bull. Amer. Math. Soc. **61** (1955), 95—112.