

Preface

This textbook contains the lecture notes of three one-semester courses given by the author to third year students at the University of Strasbourg. We assume that the reader is familiar with the calculus of one real variable. The first part on *Topology* is used everywhere in the sequel. The following two parts on *Differential calculus* and *Approximation methods* are logically independent.

We have made much effort to select the material covered by the lectures, to formulate aesthetical and general statements, to seek short and elegant proofs, and to illustrate the results with simple but pertinent examples. (See also the remarks on p. 369.) Our work is strongly influenced by the beautiful lectures of Professors Ákos Császár and László Czách during the 1970s at the Eötvös Loránd University in Budapest, and more generally by the mathematical tradition created by Leopold Fejér, Frédéric Riesz, Paul Turán, Paul Erdős and others.

On p. 337 we cite many papers of historical importance, indicating the origin of most of the notions and theorems treated here. They often contain different versions of the theorems we treat, illustrating the genesis of mathematical interest.

We suggest that, on the first reading, the reader should skip the material marked by *. At the end of each chapter we give some exercises. However, the most important exercises are incorporated into the text as examples and remarks, and the reader is expected to fill in the missing details.

We list on p. ix some books of general mathematical interest.

We thank Á. Besenyei, C. Baud, L. Czách, C. Disdier, D. Dumont, J. Gerner, P. Loreti, C.-M. Marle, P. Martinez, M. Mehrenberger, P.P. Pálffy, M. Pedicini, P. Pilibossian, J. Saint Jean Paulin, Z. Sebestyén, A. Simonovits, L. Simon, Mrs. B. Szénássy, G. Szigeti, J. Vancostenoble, Zs. Votisky and the editors of Springer for their precious help.

This book is dedicated to the memory of Paul Erdős.

Strasbourg, France
March 26, 2017

Vilmos Komornik



<http://www.springer.com/978-1-4471-7315-1>

Topology, Calculus and Approximation

Komornik, V.

2017, XIV, 382 p. 64 illus., 1 illus. in color., Softcover

ISBN: 978-1-4471-7315-1