CHAPTER 1

Introduction

For related materials, articles, research questions, and erratum consult the Web page of the author of the book:
http://www.mathematics21.org/algebraic-general-topology.html

1.1. Draft status

This is a draft.

1.2. Intended audience

This book is suitable for any math student as well as for researchers.

To make this book be understandable even for first grade students, I made a chapter about basic concepts (posets, lattices, topological spaces, etc.), which an already knowledgeable person may skip reading. It is assumed that the reader knows basic set theory.

But it is also valuable for mature researchers, as it contains much original research which you could not find in any other source except of my work.

Knowledge of the basic set theory is expected from the reader.

Despite that this book presents new research, it is well structured and is suitable to be used as a textbook for a college course.

Your comments about this book are welcome to the email porton@narod.ru.

1.3. Reading Order

If you know basic order and lattice theory (including Galois connections and brouwerian lattices) and basics of category theory, you may skip reading the chapter Common knowledge, part 1.

You are recommended to read the rest of this book by the order.

1.4. Our topic and rationale

From [**38**]: *Point-set topology, also called set-theoretic topology or general topology, is the study of the general abstract nature of continuity or "closeness" on spaces. Basic point-set topological notions are ones like continuity, dimension, compactness, and connectedness.*

In this work we study a new approach to point-set topology (and pointfree topology).

Traditionally general topology is studied using topological spaces (defined below in the section Topological spaces). I however argue that the theory of topological spaces is not the best method of studying general topology and introduce an alternative theory, the theory of *funcoids*. Despite of popularity of the theory of topological spaces it has some drawbacks and is in my opinion not the most appropriate formalism to study most of general topology. Because topological spaces are tailored for study of special sets, so called open and closed sets, studying general topology with topological spaces is a little anti-natural and ugly. In my opinion the theory of funcoids is more elegant than the theory of topological spaces, and it is