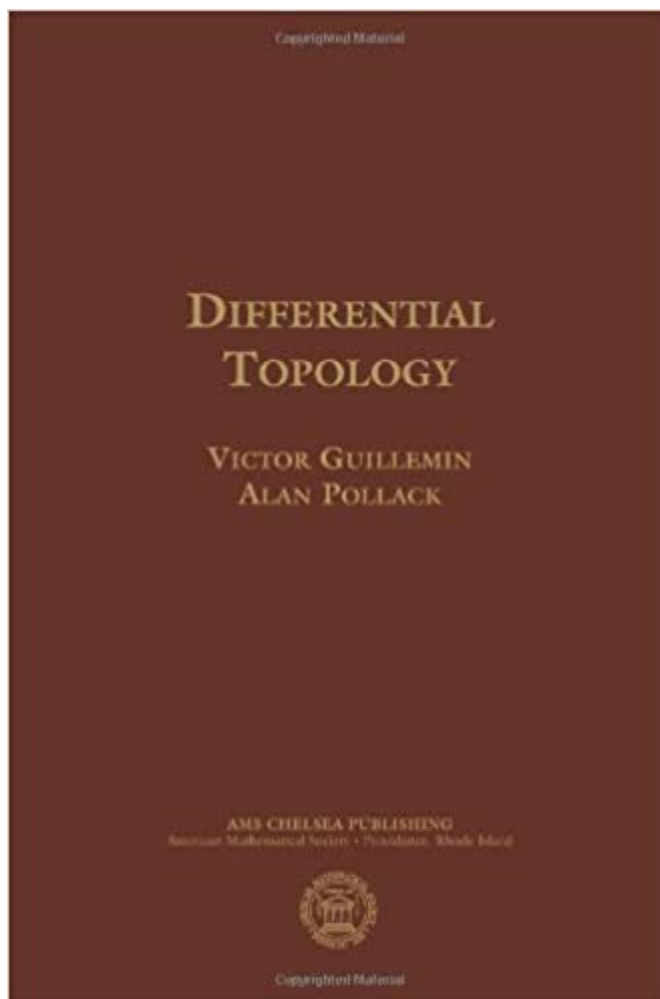


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# Differential Topology (AMS Chelsea Publishing)



## Synopsis

Differential Topology provides an elementary and intuitive introduction to the study of smooth manifolds. In the years since its first publication, Guillemin and Pollack's book has become a standard text on the subject. It is a jewel of mathematical exposition, judiciously picking exactly the right mixture of detail and generality to display the richness within. The text is mostly self-contained, requiring only undergraduate analysis and linear algebra. By relying on a unifying idea--transversality--the authors are able to avoid the use of big machinery or ad hoc techniques to establish the main results. In this way, they present intelligent treatments of important theorems, such as the Lefschetz fixed-point theorem, the Poincaré-Hopf index theorem, and Stokes theorem. The book has a wealth of exercises of various types. Some are routine explorations of the main material. In others, the students are guided step-by-step through proofs of fundamental results, such as the Jordan-Brouwer separation theorem. An exercise section in Chapter 4 leads the student through a construction of de Rham cohomology and a proof of its homotopy invariance. The book is suitable for either an introductory graduate course or an advanced undergraduate course.

## Book Information

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## Customer Reviews

This text fits any course with the word "Manifold" in the title. It is a graduate level book. --This text refers to an out of print or unavailable edition of this title.

This book is great for someone like me, who has seen bits and pieces of results from differential

topology but would like to see a unified presentation of it. The exposition is concise but includes enough discussion to build some intuition. Easily comprehensible to someone who has had earlier courses in analysis, topology, and differential geometry, and even the latter is only helpful and not strictly required. Good for the advanced undergrad/first year grad student for self-study. The printing and binding are somewhat poor though, and some unconventional notation and definition are occasionally used.

The approach taken in this book is a little dated, but with G+P's witty commentary and valuable insights, there is still much to love. Some choice quotes: "Without transversality,  $X \cap Z$  may be some frowzy, useless conglomeration." "If our propaganda has not yet made you a true believer in forms, we invite you to try defining the integral of a function. "Stand the surface vertically on one end, and coat it evenly with hot fudge topping. Let  $f_t(x)$  denote the oozing trajectory of the point  $x$  of fudge as time  $t$  passes.

This text is extremely well-organized and well-written. It is excellent as a text for a course or as an addition to a library. Well done!

Good book but the print quality is not so good.

the AMS Chelsea edition appears to be a digital facsimile of the original with pixillated letters. the typeface is visibly deteriorated - a cleaner image comes from an ordinary laser printer. It's distracting when reading what I think is a very nice book.

I loved to study this book several years ago as an undergraduate. Now I have to teach those subjects, so I decided to buy a copy for myself. I received the book, admired the beautiful hardcover, but when I opened it I was immediately shocked by the crude quality of the printing. The problem is that this is a poorly scanned version of the old edition (which I took from the library to compare). I fear I'll be dizzy if I start reading this; I guess that if I try to scan a page of the original with my home scanner and print it on a laser printer I'll get a better result. I'm very surprised that AMS published this. Now, for the first time in many years as a customer, I'll try to return this book to .PS: Another reviewer (Lucius Schoenbaum) had similar complaints as me, but for some reason he gave a 5 star rating. My single star refers not to the text itself, but to the quality of this printing and to

the value of the purchase.

I agree with the reviewer who is not a "higher mathematician". Neither am I; in fact, I repeatedly found that both Milnor and Hirsch became remarkably clearer after reading the same material from this book. So I stuck to this book. Chapter 4 is particularly well-written, with a very incisive discussion of connections among geometry, algebra, and topology. I hope the publishers decide to republish this book. How hard can that be in the modern small-volume printing era?

We're using this text right now for my differential topology class. Over all, I find it rather hard to learn from... The definitions at times are sloppy and the over all feel from the book is simply too casual to use as a text. If it were cheaper, I think it'd be a great way to acquaint oneself with the subject. It's just not "text book" material. I've found "Introduction to Smooth Manifolds" by John Lee to be far more useful.

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