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Topology Of Surfaces, Knots, And Manifolds

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and Manifolds

A First Undergraduate Course

Stephan C. Carlson
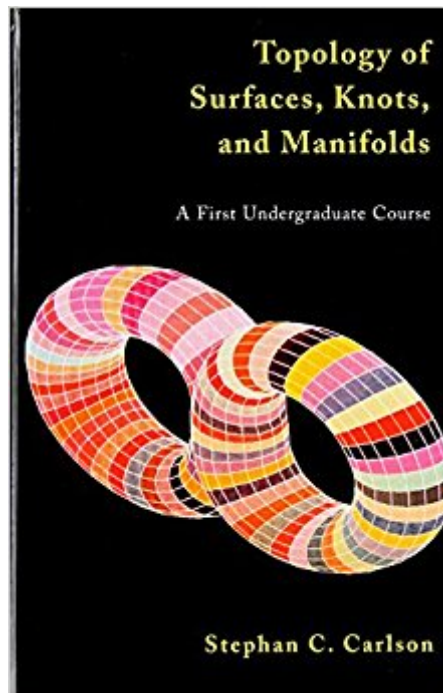
Synopsis

Topology of Surfaces, Knots, and Manifolds offers an intuition-based and example-driven approach to the basic ideas and problems involving manifolds, particularly one- and two-dimensional manifolds. A blend of examples and exercises leads the reader to anticipate general definitions and theorems concerning curves, surfaces, knots, and links--the objects of interest in the appealing set of mathematical ideas known as "rubber sheet geometry." The result is a book that provides solid coverage of the mathematics underlying these topics.

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Customer Reviews

Master the basic ideas of the topology of manifolds TOPOLOGY OF SURFACES, KNOTS, AND MANIFOLDS offers an intuition-based and example-driven approach to the basic ideasÃ Â and problems involving manifolds, particularly one- and two-dimensional manifolds. A blend of examples and exercises leads the reader to anticipate general definitions and theorems concerning curves, surfaces, knots, and links--the objects of interest in the appealing set of mathematical ideas known as "rubber sheet geometry." The result is a text that is accessible to a broad range of undergraduate students, yet will provides solid coverage of the mathematics underlying these topics. Here are some of the features that make Carlson's approach work: A student-friendly writing style provides a clear exposition of concepts.   mathematical results are presented accurately and main definitions, theorems, and remarks are clearly highlighted for easy reference.   Carefully selected exercises, some of which require hands-on work on computer-aided visualization , reinforce the understanding

of concepts or further develop ideas.   Extensive use of illustrations helps the students develop an intuitive understanding of the material.   Frequent historical references chronicle the development of the subject and highlight connections between topology and other areas of mathematics.   Chapter summary sections offer a review of each chapter's topics and a transitional look forward to the next chapter.

Shipping was excellent. Book in very good shape as expected. Good precursor to topology. Completed the book in just over a week.

This book is subtitled "A First Undergraduate Course" but is certainly below undergraduate level. A high school student could easily follow this--which might be a good thing in certain cases--but the rigor is lacking. In fact, there is barely a hint of any rigor whatsoever. It is mostly intuitive arguments and the author often says things like "but we won't bother worrying about mathematical technicalities". It does get you to be able to visualize certain things well, but the visualization techniques can be found in other books also. The book is very thin and a quick read--hardly worth the money they are trying to get for it. If you're really at the undergraduate level and want to learn some topology, try something like Mendelson's "Introduction to Topology" by Dover or one of the excellent topology books in the series "Undergraduate Texts in Mathematics" by Springer. Munkres is also a classic. If you're not an undergraduate in a math related field and just want to know about the ideas behind topology or perhaps see some visualization techniques, try something like "The Shape of Space" by Weeks. Overall I was very disappointed with this text. If you could purchase this book for under $20 it might be worth it, but even then I think the other books I quoted are better in both price and substance.

This book presents the topology of surfaces, manifolds and knots in a manner that is reachable for undergraduate students with only a knowledge of calculus. Some linear algebra might be helpful. The text is written in a style that is easy to follow and there are superfluous examples. The exercises in the text are well thought out and are not extremely difficult. The exercises complement the text very well. The text makes clear a lot of difficult concepts such as isotopic surfaces as opposed to homeomorphic surfaces. I particularly enjoyed the manner in which the topology of knots was explained. After reading this text, the reader should be able to better visualize the projective plain and even the Klein bottle as it exists in 4-dimensional space. I have not read a text on topology that I enjoyed reading as much since Munkres. This text is a must have for any

topologist.

This is a relatively fun romp through some very interesting concepts, but it lacks rigor. The book could have been much stronger if the author had simply developed some of the basic concepts (compactness, connectedness, homeomorphisms, homotopy, etc) rather than do a little hand-waving around a nice illustration. As it stands, this book is only 140 pages long, and does not develop any of its topics (manifolds, surfaces, graphs, knots) adequately. This book is far too weak to serve as a good text. Kinsey's TOPOLOGY OF SURFACES is much stronger, and costs less. Or look as something like Gamelin's INTRO TO TOPOLOGY. Or even Schaum's outline GENERAL TOPOLOGY, which deals with the basics, but is highly readable and rigorous.

Knots: The Complete Guide Of Knots- Indoor Knots, Outdoor Knots And Sailbot Knots (Knot Tying, Splicing , Ropework,Macrame Book 1) Topology of Surfaces, Knots, and Manifolds Essential Knots: Top 25 Sailbot Knots, Outdoor Knots And Indoor Knots Tying Knots: How to Tie Knots and Use Them in the Wilderness: (Knots Tying, Knots Guide) DIY Collection: Top 37 Useful Knots And Paracord Projects With Illustrated Instructions: (Paracord Knife, Indoor Knots, Outdoor Knots, Sailboat Knots) Knots: 15 Most Useful Boating Knots - How to Tie Boating Knots Instruction Manual Natural Surfaces: Visual Research for Artists, Architects, and Designers (Surfaces Series) Orvis Vest Pocket Guide to Leaders, Knots, and Tippets: A Detailed Field Guide To Leader Construction, Fly-Fishing Knots, Tippets And More Book of Sailing Knots: How To Tie And Correctly Use Over 50 Essential Knots The Field Guide to Knots: How to Identify, Tie, and Untie Over 80 Essential Knots for Outdoor Pursuits Decorative Fusion Knots: A Step-by-Step Illustrated Guide to New and Unusual Ornamental Knots Knots: 20 Lessons On Tying And Using Knots With Step by Step Instructions The Pocket Guide to Equine Knots: A Step-by-Step Guide to the Most Important Knots for Horse and Rider (Skyhorse Pocket Guides) Knots: A Folding Pocket Guide to Purposeful Knots (Pocket Tutor Series) Tensors and Manifolds: With Applications to Physics Hyperbolic Manifolds: An Introduction in 2 and 3 Dimensions Foundations of Differentiable Manifolds and Lie Groups (Graduate Texts in Mathematics) (v. 94) Foundations of Differentiable Manifolds and Lie Groups (Graduate Texts in Mathematics) Tensor Analysis on Manifolds (Dover Books on Mathematics) Introduction to Smooth Manifolds (Graduate Texts in Mathematics, Vol. 218)

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