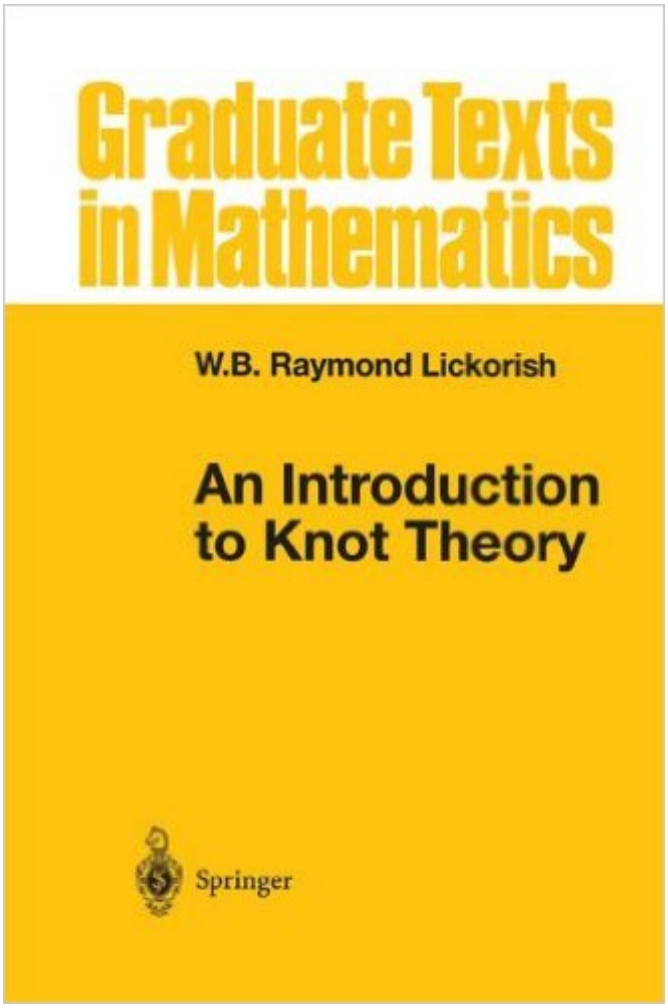
An Introduction To Knot Theory (Graduate Texts In Mathematics)



Synopsis

A selection of topics which graduate students have found to be a successful introduction to the field, employing three distinct techniques: geometric topology manoeuvres, combinatorics, and algebraic topology. Each topic is developed until significant results are achieved and each chapter ends with exercises and brief accounts of the latest research. What may reasonably be referred to as knot theory has expanded enormously over the last decade and, while the author describes important discoveries throughout the twentieth century, the latest discoveries such as quantum invariants of 3-manifolds as well as generalisations and applications of the Jones polynomial are also included, presented in an easily intelligible style. Readers are assumed to have knowledge of the basic ideas of the fundamental group and simple homology theory, although explanations throughout the text are numerous and well-done. Written by an internationally known expert in the field, this will appeal to graduate students, mathematicians and physicists with a mathematical background wishing to gain new insights in this area.

Book Information

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Customer Reviews

I had always felt the need to understand knot theory or at least to have an introductory knowledge of it. Knots, ever since I met them have intrigue me and fascinate as how those weird entangled pieces of string, i.e. in other words their funny and beautiful shapes, can be formulated in a quantitative way through the use of mathematics, specially the topological invariants of polynomials were my

concern. They were a real mystery to me as I suppose Quantum Mechanics was a mystery to me when I was at high school. Well, the story is that I had tried several books to dive into knot theory but it was complete failure until I pick this book. I must say though, that when I did it I already had a knowledge of Algebraic Topology which is needed. Before saying anything else I must tell you that I am a physicist and so I have not try to understand every proof to every proposition, lemma and theorem but just to read it as a novel learning facts here and there. I also, as a physicist had a special interest in the Jones Polynomial since it pops up in topological quantum field theory thanks to the work of Edward Witten. So, what can I say? I only read the first 6 chapters (It has 16 in total) and I'm satisfy because I did encounter and comprehend the Jones polynomial and also the Alexander polynomial.