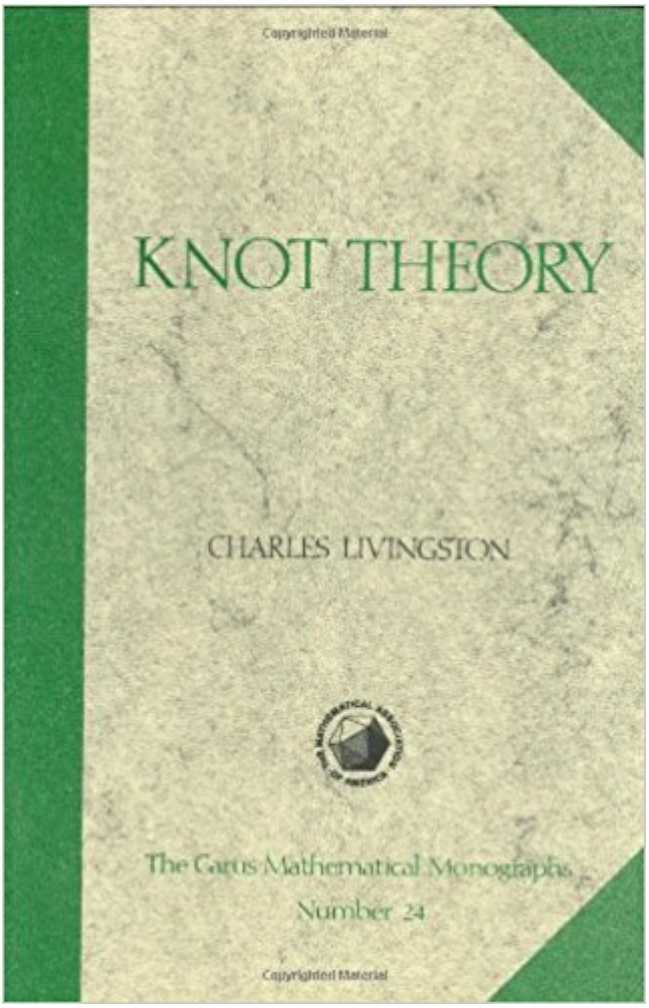
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Knot Theory (Mathematical Association Of America Textbooks)



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Synopsis

Knot Theory, a lively exposition of the mathematics of knotting, will appeal to a diverse audience from the undergraduate seeking experience outside the traditional range of studies to mathematicians wanting a leisurely introduction to the subject. Graduate students beginning a program of advanced study will find a worthwhile overview, and the reader will need no training beyond linear algebra to understand the mathematics presented. The interplay between topology and algebra, known as algebraic topology, arises early in the book, when tools from linear algebra and from basic group theory are introduced to study the properties of knots, including one of mathematics' most beautiful topics, symmetry. The book closes with a discussion of high-dimensional knot theory and a presentation of some of the recent advances in the subject - the Conway, Jones and Kauffman polynomials. A supplementary section presents the fundamental group, which is a centerpiece of algebraic topology.

Book Information

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Customer Reviews

'The author's book would be a good text for an undergraduate course in knot theory ... The topics in the book are nicely tied together ... The topics and the exercises together can provide an opportunity for many undergraduates to get a real taste of what present day mathematics is like.' Mathematical Reviews'Get knotted ... ' Scouting for Boys

Knot Theory, a lively exposition of the mathematics of knotting, will appeal to a diverse audience of mathematical readers, from undergraduates to professionals. The author introduces tools from linear algebra and basic group theory and uses these to study the properties of knots, high-dimensional knot theory and the Conway, Jones and Kauffman polynomials.

The perfect book for undergraduates interested in learning knot theory without the algebraic topology prerequisites. This book is great as an introduction, and develops as much of the material as possible without the use of homology.

The book is an excellent exposition on Knot Theory. The author glosses over many technical details, but that allows the reader to delve more deeply into the material. The concepts and practice of Knot Theory are very well presented.

This book is an excellent introduction to knot theory for the serious, motivated undergraduate students, beginning graduate students,mathematicains in other disciplines, or mathematically oriented scientists who want to learn some knot theory.Prequisites are a bare minimum: some linear algebra and a course in modern algebra should suffice, though a first geometrically oriented topology course (e. g., a course out of Armstrong, or Guillemin/Pollack) would be helpful.Many different aspects of knot theory are touched on, including some of the polynomial invariants, knot groups, Alexander polynomial and related abelian invariants, as well as some of the more geometric invariants.This book would serve as a nice complement to C. Adams "Knot Book" in that Livingston covers fewer topics, but goes into more mathematical detail. Livingston also includes many excellent exercises. Were an undergraduate to request that I do a reading course in knot theory with him/her, this would be one of the two books I'd use (Adam's book would be the other).This book is intentionally written at a more elementary level than, say Kaufmann (On Knots), Rolfsen (Knots and Links), Lickorish (Introduction to Knot Theory) or Burde-Zieshcang (Knots), and would be a good "stepping stone" to these classics.

Livingston does a good job on basic knot theory in this text. While Adams seems to jump around a bit in his book, Livingston keeps a nice flow to his work. The proofs require another text and a good background in algebra to understand, but the problems are wonderful for a deeper understanding of the material.

Livingston's book is very concise and dense. It contains a lot of information, but is not the kind of book you could sit down and read through from cover to cover. It is excellent as a reference, a sort-of knot theory encyclopedia.

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