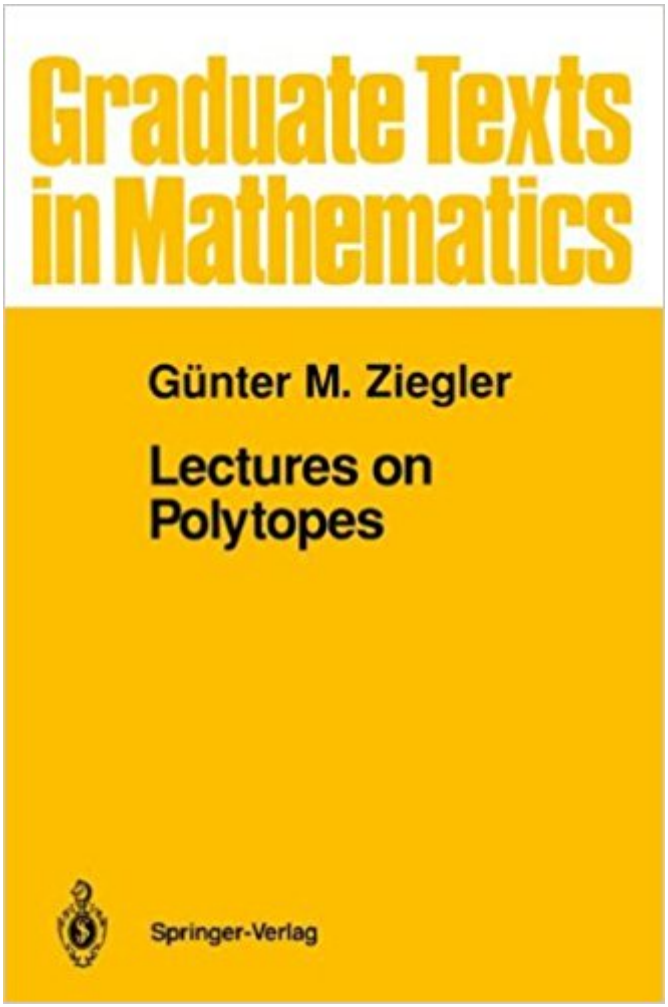
Lectures On Polytopes (Graduate Texts In Mathematics)



Synopsis

Based on a graduate course at the Technische UniversitÃ¤t, Berlin, these lectures present a wealth of material on the modern theory of convex polytopes. The straightforward exposition features many illustrations, and complete proofs for most theorems. With only linear algebra as a prerequisite, it takes the reader quickly from the basics to topics of recent research. The lectures introduce basic facts about polytopes, with an emphasis on methods that yield the results, discuss important examples and elegant constructions, and show the excitement of current work in the field. They will provide interesting and enjoyable reading for researchers as well as students.

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Customer Reviews

Based on a graduate course at the Technische UniversitÃ¤t, Berlin, these lectures present a wealth of material on the modern theory of convex polytopes. The straightforward exposition features many illustrations, and complete proofs for most theorems. With only linear algebra as a prerequisite, it takes the reader quickly from the basics to topics of recent research. The lectures introduce basic facts about polytopes, with an emphasis on methods that yield the results, discuss important examples and elegant constructions, and show the excitement of current work in the field. They will provide interesting and enjoyable reading for researchers as well as students.

Honestly haven’t been this excited for a book since Harry Potter came out even though this book was written a while back. It came in perfect condition and within minutes of receiving it I was

engrossed. Can’t wait to read this to my child.

This book is very clearly an introduction, and does not cover the more advanced topics (for that, see the books by Richter-Gebert, Sturmfels, Stanley). Nor does it cover the major application area of the field (linear programming), which is a shame, since much of the subject does not seem to be very motivated without it. Indeed, even the major connected area in pure mathematics (toric varieties) is not touched on. Even the in the subjects he does cover, he does not try to dive very deeply (for example, in the (excellent) section on Steinitz’ theorem, he does not prove the contractibility of the realization space). So, the author picks his battles, and wins the ones he picks. As the other reviewer has mentioned, the bibliography is excellent. So, I would have given the book 4.5 stars if that were possible, with a penalty for motivation (or lack thereof).

If you are browsing around for a recent advanced text on modern polytope theory, this is it. Ziegler is very clear, comprehensive, and provides hundreds of references.

* Minimal prerequisite.* Readable from any place.I found quickly things I was looking for and now ready to read something more advanced.

Theory (Graduate Texts in Mathematics) The Geometry of Schemes (Graduate Texts in Mathematics)