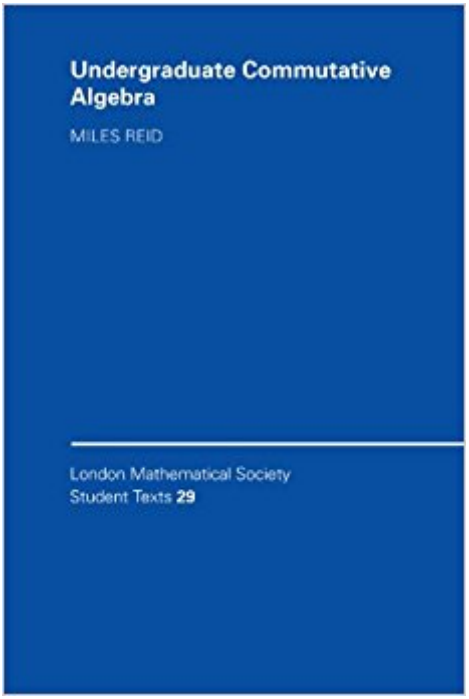
Undergraduate Commutative Algebra (London Mathematical Society Student Texts)



Synopsis

In this well-written introduction to commutative algebra, the author shows the link between commutative ring theory and algebraic geometry. In addition to standard material, the book contrasts the methods and ideology of modern abstract algebra with concrete applications in algebraic geometry and number theory. Professor Reid begins with a discussion of modules and Noetherian rings before moving on to finite extensions and the Noether normalization. Sections on the nullstellensatz and rings of fractions precede sections on primary decomposition and normal integral domains. This book is ideal for anyone seeking a primer on commutative algebra.

Book Information

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Customer Reviews

'It gives a fresh picture of the subject for a new generation of students.' P. Scnezel, Zentralblatt fur Mathematik'The author takes care to explain the geometric and number theoretic meaning of the algebraic methods and results presented. This makes the book perhaps more demanding, but surely much more interesting than the standard ones.' European Mathematical Society Newsletter'Besides the usual topics ... there are some welcome geometrical illustrations, as well as some homespun philosophy.' Mathematica

Showing the link between commutative ring theory and algebraic geometry, this book contrasts the methods and ideology of modern abstract algebra with concrete applications in algebraic geometry

and number theory. It is ideal for anyone seeking a primer on commutative algebra.

I used this book for an undergraduate algebraic geometry class. Most of the class absolutely hated it; I didn't feel quite as strongly. The organization is not bad, and while most beginning problems are trivial, latter ones are interesting but not unreachable.I like parsimonious texts, but at times the author goes too far, using unexplained notation (sorry I forget where.) More seriously, there's a lot of cases where the author trades providing intuition for parsimony; for example, writing that "prime implies irreducible, but the other way round is false in general". In my opinion, a simple example here would be worth the fraction of a page.Sorry I don't have a good reference to go to; I like the style of Lang's Algebra and Eisenbud's Commutative Algebra, but they may not be great introductory material. I've heard Dummit and Foote or Fraleigh are good; maybe check math.stackexchange for recommendations [...]

Wonderful book! I recommend.

This book has a particularly endearing feature - the author's personality. It is quite useful in indicating what topics are important. However it is lacking in explanations (for self-study). Consequently I look at the presentation here and then go to "Dummit & Foote" to get an understanding. Also the notation is not fully defined so it adds another layer.By the way, "Atiyah and Macdonald" is at least just as bad.Perhaps these are more viable when used in a course with an instructor. Then they can serve as a nice outline.

The material in this book is not usually considered "undergraduate": Noether normalization, spectra of rings, discrete valuation rings, and more. But this book makes them very clear. It is more geometrical, and has more motivation, than Atiyah and MacDonald INTRODUCTION TO COMMUTATIVE ALGEBRA. It is briefer and more surveyable than Eisenbud COMMUTATIVE ALGEBRA. If you go on in the subject you will certainly need Eisenbud's book. This is a very good starter, and a good companion to Eisenbud if you are learning the material on your own.

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