There is no single set textbook for this introduction to abstract algebra. Instead, you have a complete, self-contained set of notes, written by Dr Bleile. These notes form the core of PMTH332 and you should focus on working through them thoroughly. Do not just read them, but work through them with care, diligence, perseverance and close attention.

While the notes contain everything covered in PMTH332, it is important, and can be enlightening, to refer to text books for a different perspective.

There is no royal road to mathematics. Each author has his or her own approach and style, which is influenced by his or her interests. These influence the form of the books and the selection of topics. Moreover, each of us has a different way of approaching mathematics. A lucid explanation to one person may easily be opaque to another.

You should go to the nearest library with a respectable selection of mathematics books — as opposed to merely textbooks for “mathematical” courses — and browse. Look at any book in the mathematics section with “algebra” in its title and see how many of the topics and/or theorems of this course appear there. Most books will cover nearly all of this material and many go far beyond it as well. Read into these books to see which one suits you. Only when you find a book which appeals to you should you buy it.

There are three recommended books for this course. Each covers the material contained in the lecture notes. They are listed alphabetically, not in order of recommendation.


This is a concise and elegant introduction to abstract algebra. It covers most of the material contained in the lecture notes for PMTH332, although in a different order.

**N. Jacobson**  *Basic Algebra I*  2nd ed. 2009.

This is a classic text by one of the foremost algebraists of his generation. This is an excellent reference book. It covers the material contained in the lecture notes for PMTH332 in the first two chapters and then goes on to modules over principal ideal domains, Galois theory of equations, metric vector spaces and the classical groups, algebras over a field, lattices and Boolean algebras. I recommend this book to students who want to pursue further studies in mathematics or theoretical physics. Other students are encouraged to peruse it.

**S. Mac Lane**  and **G. Birkhoff**  *Algebra*  Macmillan, 1967.

This is a classic text on algebra by two of the pioneers of abstract algebra.