

Mathematics 3310.01
Introduction to Abstract Algebra
Fall, 2018
Gasson 202, MWF 2–3
Rob Gross

Office: Maloney 515, 617-552-3758

Office Hours: Monday and Wednesday, 12–1, Wednesday, 3–5, and by appointment

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Class home page: <http://fmwww.bc.edu/gross/MATH3310>

Text: *A Concrete Introduction to Higher Algebra*, third edition, by Lindsay N. Childs

This course studies four fundamental algebraic structures: groups, including subgroups, cyclic groups, permutation groups, symmetry groups and Lagrange’s Theorem; rings, including subrings, integral domains, and unique factorization domains; polynomials, including a discussion of unique factorization and methods for finding roots; fields, introducing the basic ideas of field extensions and ruler and compass constructions. Building on the prerequisite courses—MATH2210 (Linear Algebra) and MATH2216 (Introduction to Abstract Mathematics)—we shall see how these relatively simple structures permeate many areas of mathematics.

Homework

Homework will be assigned and collected weekly, usually on Fridays. If you wish to turn in any homework longer than one page, *you must use a stapler*. Folding the edges of the pages over is unacceptable. Paper clips are also not acceptable. This rule makes grading homework much faster.

You may not work together on homework assignments. You should feel free to see me during office hours, or e-mail me for help when you are stuck on problems. Many of the homework problems can require days to solve, so you should not wait until Thursday evening to read the assignment.

All homework submitted in this class must be typeset in some way. Microsoft Office, Open Office, Google Docs, and similar word processors are acceptable, but not the best way to type mathematics. I strongly suggest that you install some version of \LaTeX on your computer and learn how to use it.

Macintosh users can download \MacTeX at <http://www.tug.org/mactex>. Windows users can download \MikTeX at <http://miktex.org>. There is plentiful documentation included in either of those downloads, but it is buried deep in various folders. One helpful guide is *The Not So Short Introduction to $\text{\LaTeX} 2_{\epsilon}$* , available at <http://tobi.oetiker.ch/lshort/lshort.pdf>. The Wikipedia entry for \LaTeX has links to many other introductory articles, including an excellent Wikibook at <http://en.wikibooks.org/wiki/LaTeX>. An interface called LyX is available at <http://www.lyx.org>.

As you prepare your solutions, I suggest that you store a copy in the cloud, and also mail a copy to yourself every time you made any changes. Flash drives have been known to fail, and hard drives are also less reliable than you might think.

Grades

There will be three examinations during the semester, tentatively scheduled for Friday, October 5; Monday, November 5; and Friday, December 7. These will account 13%, 15%, and 17%, respectively, of your final grade. The final will account for 35%. Homework will account for the remainder.

The final examination for MATH3310.01 is scheduled for Wednesday, December 19, at 9 AM. Note that this time is fixed by the Registrar, and cannot be altered.

Academic Integrity

Any violations of the College's policy on academic integrity will be dealt with severely. For more information, see

<http://www.bc.edu/offices/stserv/academic/integrity.html>

Make sure that the work you submit is in accordance with university policies. If you have any questions, please consult with me.

Note: If you are a student with a documented disability seeking reasonable accommodations in this course, please contact Kathy Duggan (617-552-8093, dugganka@bc.edu) at the Connors Family Learning Center regarding learning disabilities and ADHD, or the Disability Services Office, (617-552-3470, disabsrv@bc.edu) regarding other types of disabilities, including temporary disabilities. Advance notice and appropriate documentation are required for accommodations.