

Abstract Algebra II

MATH 431 – 01

Location. TTh 3:30 pm – 4:45 pm 034 Burruss Hall.

Text. *A first course in abstract algebra*, by John B. Fraleigh (7th edition).

Professor. Leonard Van Wyk (rhymes with “bike”), 127 Burruss Hall, ×8-2514,
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Office Hours. TTh 2:00 pm – 3:15 pm, and by appointment.

Course Web Page. www.math.jmu.edu/~vanwyk/courses/431/ contains announcements, concepts, homework problems, etc.

Material. We have a lot of freedom in this class. Below are some topics I could cover. The only group of sections I absolutely must do is the first group. The others are listed in random order.

Quotient things. Sections 14, 15, 26, 27.

Group actions. Sections 16, 17.

Plane geometry. Section 12 and notes.

Combinatorial group theory. Sections 39, 40, and notes.

Extension Fields. Sections 29-31, 33.

Algebraic coding theory. Notes.

Homology groups. Sections 41-44.

Homotopy groups. Notes.

Galois theory. Sections 48-51, 53, 54.

Expectations. I expect you to read the textbook before we talk about the material in class. I expect you to keep up.

Exams. There will be five take-home exams (each worth 50 points). That’s it. The take-home exams will be due at the beginning of class on: January 20, February 10, March 3, March 31, and April 21.

Final Exam Date and Time. The final exam is cumulative and will be worth 200 points. It will consist entirely of previously assigned homework problems. The final exam will be given Thursday 5 May 4 pm - 6 pm in 034 Burruss.

Cards and Attendance. I keep a stack of index cards with your names on them, and use these to ask questions during class. Aside from keeping the class more interesting for you, using these cards allows me to better evaluate your understanding of the material; this could influence your grade by a third of a letter or so (for example, C+ ↔ B-). I also use these cards to keep track of your attendance, which can also impact your grade. *You are responsible for the material covered in my class, whether or not you attend.*

Homework. Assigned homework problems will be listed on the course web page. Since the final exam problems will be chosen from these you should do them as soon as possible.

Grading. At the end of the semester, I will total everyone's points from the take-home exams (250 points) and the final exam (200 points), plot them on a graph, and determine the grades from that distribution, making adjustments depending on your in-class participation.

Make-up Policy. DO NOT ASSUME YOU WILL BE GIVEN A MAKE-UP EXAM JUST BECAUSE YOU MISSED AN EXAM. With the exception of extraordinary situations, anything you miss counts as a 0. If you are unsure about whether or not your situation falls under the "extraordinary" category, talk to me. I am more likely to be understanding if you talk to me *before* the fact than after the fact.

Cheating. Don't do it. If I catch you cheating, I will hand any evidence I have to the Honors Council and let them deal with you.

As far as the take-home exams, here is the rule: FOR THE TAKE-HOME EXAMS, NO WRITTEN INFORMATION MAY BE EXCHANGED BETWEEN STUDENTS. YOU MAY DISCUSS STRATEGIES WITH EACH OTHER, BUT ONLY IF NO PENS, PENCILS, CHALK, CRAYONS, ETC. ARE USED. If this is unclear, ask me to explain further.

Comments. Tuesday-Thursday classes tempt students to work less. That would be a mistake in this class. In particular, BE SURE TO WORK ON THIS CLASS BETWEEN THURSDAY AND TUESDAY. Otherwise, your grade will suffer greatly. Believe me. I never lie and I'm always right.

Feel free to visit my office with questions.