

Math 419 – Algebraic structures 2 – Spring 2026

Instructor

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Office: Eggleston 110

Office hours: by appointment

Meetings

10-10:50am MWF

Birdsong 201

Textbook

A First Course in Abstract Algebra

2nd Edition

by Anderson and Feil

Course topics: Symmetry groups, cyclic groups, abelian groups, subgroups, group homomorphisms and isomorphisms, Cayley's theorem, Lagrange's theorem, quotient groups, the First Isomorphism Theorem, and the Fundamental Theorem of Abelian groups.

Schedule: We'll start in section 22 and work through the book, aiming to get through section 35 by the end, but we'll go at whatever pace makes sense. If we have extra time, we'll discuss matrix groups.

Grades: Final grades are calculated by weighted average:

Homework	25%
Daily examples	25%
Quizzes	25%
Final exam	25%

0	60	63	67	70	73	77	80	83	87	90	93
F	D-	D	D+	C-	C	C+	B-	B	B+	A-	A

Homework: Weekly assignments due Mondays. Each assignment, you can submit corrections to one problem from the previous assignment (for full credit). Problems posted on Blackboard.

Daily examples: This includes daily participation and a notebook submitted at the end of the semester. Before class, you'll write an example in your notebook. At the start of class, I'll call on a randomly selected person to present their example in 1-3 minutes. I will ensure that each person is called on an equal number of times. Grades depend both on giving an example when called on, and submitting a complete notebook at the end of the semester.

Quizzes: Every other Friday, for a total of 6 quizzes. Before each quiz we'll review for a bit, then you'll have the rest of the class for the quiz. You can bring a 3x5 notecard with notes.

Final exam: Covering material from the entire semester. You can bring two 3x5 notecards with notes.

Disability accommodations: Talk to me if you have an accommodations letter so that we can discuss your specific needs. If you do not have a letter, contact disabilityservices@vwu.edu.

Attendance: Attendance is not directly part of the grade calculation, but missing class will inevitably lead to missing some credit from the daily examples.

Office hours: By appointment through a link on Blackboard. If you no-show or cancel an office hour within 12 hours, I will not accept appointments from you for 30 days.

Key dates

Date	What
February 6	Quiz #1
February 20	Quiz #2
February 27	Class cancelled
March 6	Quiz #3
March 16 - 20	No class, spring break
March 27	Quiz #4
April 6	No class, Easter break
April 10	Quiz #5
April 24	Quiz #6
May 1	No class, academic symposium
May 8	Last day of classes
May 11-14	Final exam week
May 12	11:30am Final exam

More info on daily examples

Before each class, you should complete one page in your example notebook. The list of questions for each day will be detailed in a separate documented, updated throughout the semester.

A completed page in the example notebook must include:

- The date
- A copy of the question/description of what example was asked for
- A description of your example and brief explanation of why it is a valid example

For instance, if I said, “Give an example of a non-abelian group,” your example page might look like:

Monday, January 26. Give an example of a non-abelian group.

The group S_3 (the symmetric group on 3 elements) is non-abelian, because $(12)(23) = (123)$ and $(23)(12) = (132)$.

At the start of each class, I will call on 1-2 randomly selected people to present their examples in 2-3 minutes. When called on, it is not necessary that your example is perfect, but you do need to be ready present it so that we can all learn together. I will ensure that everyone is called on roughly the same number of times. If you are absent when called on, you will not receive credit (unless you have notified me in advance that you are sick, at a sporting event, etc.).

Half of this grade category is successfully presenting examples when called on, and half the grade is submitting a complete notebook at the end of the semester.

$$\text{daily examples grade} = \frac{1}{2} \left(\frac{\text{times successfully presented}}{\text{times called on to present}} \right) + \frac{1}{2} \left(\frac{\text{completed notebook pages}}{\text{assigned notebook pages}} \right)$$