

MATH 411 SYLLABUS

INSTRUCTOR: Kristin DeVleming (she/her), kdevleming@umass.edu

WEBSITE: Canvas, or <https://people.math.umass.edu/~devleming/teaching/411/>

LECTURE: TuTh 10:00-11:15 LGRT 206.

OFFICE HOURS: TBA LGRT 1242.

TEXTBOOK: **Abstract Algebra: A First Course**, by Dan Saracino (*second edition*)

COURSE OBJECTIVES:

- Develop a grasp of group theory and modern algebra.
- Cultivate mathematical writing and problem solving skills.

This course will primarily be an introduction to **group theory** in abstract algebra. A group is a type of mathematical object, similar to objects that you have seen before (example: the integers are a group!) and we will study properties, classification, and applications of groups. Class will consist of both lecture and active problem solving.

HOMEWORK:

Homework will typically be assigned weekly, due on Sunday at midnight. Homework will be submitted to Gradescope. Late homework will not be accepted. Your lowest homework score will be dropped at the end of the semester.

Doing the homework problems is *crucial* to understanding the material in this course. When writing the solution to a problem, you are not writing just for yourself, but also for the person who is grading it. You need to explain neatly what you are doing and why (it is not the grader's job to try and guess what you were thinking!). Part of the score on each problem will be assigned based on the rigor and exposition of the solution. For each problem, you must provide a proof; giving a numerical answer is not sufficient.

Your homework score will be a combination of completeness (completing every assigned problem) and correctness (certain problems will be graded in detail). Because you will not receive feedback on every problem assigned, it is up to you to make sure you understand how to do them.

You are highly encouraged to work on your homework with others but you must write up your solutions on your own. Please list the names of all students that you collaborated with on your homework to prevent issues of academic integrity. Your homework can be handwritten or typed (the standard program for typesetting mathematics is \LaTeX). More information on typing your homework solutions can be found in Canvas.

EXAMS:

There will be three exams. The first two will be *during class* and the final will either be in-person at the scheduled time or a take-home exam (to be announced).

- Midterm I: Tuesday, March 5, *in class*.
- Midterm II: Thursday, April 11, *in class*.
- Final Exam: Tuesday, May 14, 10:30 - 12:30.

GRADE:

Your final grade will be based upon your homework (30 %), Midterm I (20 %), Midterm II (20 %) and Final Exam (30 %). The standard grading scale is:

A	A-	B+	B	B-	C+	C	C-	D	F
90	87	83	79	75	71	67	63	55	< 55

This may be adjusted based on exam performance.

I endorse Federico Ardila's axioms:

- (1) Mathematical talent is distributed equally among different groups, irrespective of geographic, demographic, and economic boundaries.
- (2) Everyone can have joyful, meaningful, and empowering mathematical experiences.
- (3) Mathematics is a powerful, malleable tool that can be shaped and used differently by various communities to serve their needs.
- (4) Every student deserves to be treated with dignity and respect.

ACCOMMODATION STATEMENT:

The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented physical, psychological, or learning disability on file with Disability Services (DS), you may be eligible for reasonable academic accommodations to help you succeed in this course. If you have a documented disability that requires an accommodation, please notify me within the first two weeks of the semester so that we may make appropriate arrangements. For further information, please visit Disability Services (<https://www.umass.edu/disability/>)

ACADEMIC HONESTY STATEMENT:

Since the integrity of the academic enterprise of any institution of higher education requires honesty in scholarship and research, academic honesty is required of all students at the University of Massachusetts Amherst. Academic dishonesty is prohibited in all programs of the University. Academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. Instructors should take reasonable steps to address academic misconduct. Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the appropriate course instructor as soon as possible. Instances of academic dishonesty not related to a specific course should be brought to the attention of the appropriate department Head or Chair. Since students are expected to be familiar with this policy and the commonly accepted standards of academic integrity, ignorance of such standards is not normally sufficient evidence of lack of intent (http://www.umass.edu/dean_students/codeofconduct/acadhonesty/).

TITLE IX STATEMENT:

In accordance with Title IX of the Education Amendments of 1972 that prohibits gender-based discrimination in educational settings that receive federal funds, the University of Massachusetts Amherst is committed to providing a safe learning environment for all students, free from all forms of discrimination, including sexual assault, sexual harassment, domestic violence, dating violence, stalking, and retaliation. This includes interactions in person or online through digital platforms and social media. Title IX also protects against discrimination on the basis of pregnancy, childbirth, false pregnancy, miscarriage, abortion, or related conditions, including recovery. There are resources here on campus to support you. A summary of the available Title IX resources (confidential and non-confidential) can be found at the following link: <https://www.umass.edu/titleix/resources>. You do not need to make a formal report to access them. If you need immediate support, you are not alone. Free and confidential support is available 24 hours a day / 7 days a week / 365 days a year at the SASA Hotline 413-545-0800.

OTHER INFORMATION:

If you need anything from me throughout the semester (e.g. an extension on a homework assignment, or a one-on-one meeting), *please reach out*. If you need additional help, the University provides low- or no-cost mental health and counseling services to all students through the Center for Counseling and Psychological Help, <https://www.umass.edu/counseling/>.