

**Instructor information:**

Instructor: Dr. Allison H. Moore  
Office: Harris Hall 4149  
Office hours: To be held over Zoom, by appointment  
Email: moorea14@vcu.edu  
Website: <http://www.people.vcu.edu/~moorea14>

**Course information:**

MATH 401 - 001. Intro to Abstract Algebra. Term: Fall Semester, 2020. CRN: 34859  
Class Meetings: 9:00 am - 9:50 am, MWF, Course taught online

**Online meetings and course design:**

This course is designed so that it can be done entirely remotely. The format of the course is synchronous, which means that lectures, quizzes and other activities will happen in real time, during our 9:00 am meetings conducted via Zoom. The Zoom URL for the course is:

<https://vcu.zoom.us/j/97895146289> Meeting ID: 978 9514 6289

**Prerequisites:**

Undergraduate level MATH 300 with a minimum grade of C and undergraduate level MATH 310 with a minimum grade of C.

**Textbook:**

The official textbook is *A first course in Abstract Algebra, 3rd edition*, by Rotman.  
ISBN-10: 0131862677; ISBN-13: 978-0131862678

**Course website:**

A Canvas page is set up for the course. (See <https://canvas.vcu.edu>) Important announcements, a copy of the syllabus, homework assignments, quizzes, study guides, and at-home exams will be posted to Canvas. Check this website regularly and make sure you receive email announcements that go through Canvas.

**Learning Outcomes**

This class will give an introduction and overview of abstract algebra, including groups, rings and fields. Examples will be emphasized throughout the semester. Group theory topics will include subgroups, cyclic groups, permutations, cosets, direct products, normal subgroups, quotient groups, group homomorphisms and the fundamental theorem of finite Abelian groups. Ring theory topics will include subrings, integral domains, ideals, polynomial rings, factorization and irreducibility. Field theory topics will be motivated by classic polynomial problems, and will touch on algebraic extensions, fields of fractions, and finite fields. If time permits, at the end of the semester we will look at some applications in cryptography, symmetry and coding, or further topics like the Sylow theorems, group presentations or basic Galois theory.

## Homework and Peer Review

Homework will be assigned periodically and will be due every two weeks on Fridays. Handwritten or typed homework should be submitted in PDF format online, through Assignments in Canvas. Working problems is the best way to learn the material, so expect homework assignments to be long. Not every problem on the assignments will be graded; a subset will be graded for correctness and the remaining problems will be marked for completion.

In addition to solving homework problems, you will be expected to read and review other students' work. Shortly after each homework assignment is due, you will be assigned a small number of problems to assess and will have a week to complete the reviews. This will all be done within Canvas. Participation in peer reviews will be worth a small percentage of your overall grade. Due to the peer review structure of homework assessment, late homework will not be accepted. The lowest two homework assignments will be dropped at the end of the semester.

## Quizzes

Alternating with the Friday homework deadlines, we will have quizzes every other week on Fridays. Quizzes will be timed, and conducted over Zoom and Canvas in real-time, during our Friday 9am meetings. Quizzes will be short and designed to be similar to the current homework assignment. The quiz may be formatted in several different ways. Some weeks, I may pose the questions over Zoom, and have students write their responses on paper and submit a PDF of their responses to Canvas by the end of the hour. Other quizzes may be conducted through the "Quizzes" feature of Canvas, particularly for true/false, numeric, or short-form quiz problems.

I understand that over the course of the semester, students may experience schedule disruptions or illness. For this reason, I will drop the lowest two quiz scores at the end of the semester.

## Exams:

All exams for this course (midterms and the final) will be conducted as "at-home" exams. A PDF of the exam will be posted to Canvas, and students will be given a fixed amount of time to complete the exam. These exams are to be completed either on paper, or on a tablet with a stylus. Your handwritten exam solutions, formatted as a PDF, will be returned by online submission in Canvas. I will be creating at-home exams that are designed to be open-book and open-notes and with calculators permitted, but restricted to our own course materials. The use of the internet, or any other method of asking for and receiving help from another individual or resource will be strictly forbidden on these exams. The final exam will also be conducted as at-home exam. Final exam times are set by VCU here: <https://rar.vcu.edu/exams/index.html>.

Midterm 1	Friday, October 2	at-home exam
Midterm 2	Friday, November 13	at-home exam
Final Exam	Date TBD	at-home exam

**Make-up exams** If you miss an exam and have a valid, documented excuse, I will work with you to coordinate a make-up exam. An early final will not be given to accommodate travel plans.

**Grades:**

Your grade will be determined by the following:

Homework	15%	Homework scores averaged together, lowest two dropped
Peer Review	5%	Points based on participation
Quizzes	20%	Quiz scores averaged together, lowest two dropped
Midterm 1	20%	Not cumulative
Midterm 2	20%	Not cumulative
Final	20%	Cumulative

**About curves:** The default bracketing of letter grades is as follows:  $A : 90 - 100\%$ ,  $B : 80 - 89\%$ ,  $C : 70 - 79\%$ ,  $D : 60 - 69\%$ , and  $F : 0 - 59\%$ . You should plan on estimating your progress throughout the semester with this letter grade distribution.

Depending on the severity of the midterm and final exam performance, I may choose to apply a “curve” at the **end of the semester**. What this means is that I reserve the right to adjust the letter grade brackets. However, your letter grade will **never** drop below the initial generic bracketing. While my typical curve might improve your letter grade over the raw numerical score, it usually doesn’t change the grade much. In general, it is not a good strategy to count on the curve to raise your grade.

The instructor reserves the right to offer extra-credit assignments, to drop additional assignments, or make other small adjustments as necessary.

**Academic Help:**

VCU has great resources to help you succeed.

- Our Zoom meetings are your first stop. I am happy to answer questions, work examples and help you understand the homework. I can also do this in a one-on-one Zoom appointment.
- The Campus Learning Center at VCU offers appointment, drop-in and group tutoring in undergraduate courses across the disciplines.  
<https://clc.vcu.edu/tutoring/>
- Within WebAssign, you can create and practice extra problems that are similar to the assignments in order to better prepare for exams.

**Honor System: upholding academic integrity**

The VCU Honor System policy describes the responsibilities of students, faculty and administration in upholding academic integrity. According to this policy, “Members of the academic community are required to conduct themselves in accordance with the highest standards of academic honesty, ethics and integrity at all times.” Students are expected to read the policy in full and learn about requirements here: <https://conduct.students.vcu.edu/vcu-honor-system/>

I want you to know that I am grateful for your presence and input in our classrooms (whether in person or online). I appreciate and welcome you regardless of your immigration status, country of origin and/or citizenship, race, ethnicity, religious affiliation, gender/sex, gender identity, sexual

orientation, age, or dis/ability. Thank you for enriching our world, sharing your vital experience, and contributing to the diversity that makes our intellectual community vibrant and evermore creative.

### **Students with disabilities:**

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, as amended, require that VCU provide "academic adjustments" or "reasonable accommodations" to any student who has a physical or mental impairment that substantially limits a major life activity. To receive accommodations, students must register with the Office of Student Accessibility and Educational Opportunity on the Monroe Park Campus (828-2253) or the Division for Academic Success on the MCV campus (828-9782). Please also visit the Student Accessibility and Educational Opportunity website via <https://saeo.vcu.edu/> and/or the Division for Academic Success website via <https://das.vcu.edu/> for additional information.

Once students have completed the registration process, they should schedule a meeting with their instructor (s) and provide their instructor (s) with an official accommodation letter. Students should follow this procedure for all courses in the academic semester.

### **Requesting accommodations**

The university recognizes that some students who previously did not need Section 504 Academic Accommodations, and who have a qualifying condition or disability, may need support or assistance during the return to campus process. A modified approach for the temporary and more permanent need for accommodation has been developed and implemented to provide students with full access to programs and activities related to their academic majors. Because every case is different, student requests are evaluated on a case-by-case basis. Please share your need for an accommodation with the Student Accessibility and Education Office, or for MCV Campus students, the Division for Academic Success, after you have worked directly with your faculty member.

### **Extended Syllabus:**

Students should visit <http://go.vcu.edu/syllabus> and review all syllabus statement information. The full university syllabus statement includes information on safety, registration, the VCU Honor Code, student conduct, withdrawal and more.