

Instructor: Dr. Laura Rider
Office: 633 Boyd
Office Hours: 10-11 MT, 1:20 - 2:20 F, and by appointment
Email: laurajoy@uga.edu
Course Webpage: <http://faculty.franklin.uga.edu/laurajoy/content/abstract-algebra-f2017>
Meetings: 12:20 - 1:10 MWF in 322 Boyd
Text: *Abstract Algebra: An Introduction*, 3rd edition by Hungerford

Description In grade school, we learned arithmetic with the integers. We return to this setting to begin the study of *abstract* or *modern algebra*. Our goal is to study “number systems” equipped with operations similar to addition, multiplication, and sometimes division. Abstract algebra has applications in cryptography, understanding why we have no general formula giving solutions to general 5th degree polynomials, solving a rubiks cube, and quantum mechanics (to name a few).

In this course, we focus on the notion of a *ring* with an emphasis on the examples of the integers, the integers modulo n , and the collection of polynomials. While understanding these examples is imperative, we also highlight theoretical aspects—that is, abstracting properties of the integers and proving *theorems* or consequences of these properties.

Grading Your grade will be determine by

Participation and in-class quizzes:	10%
Homework:	20%
2 in-class exams:	40%
Final exam (comprehensive):	30%

Exam schedule

Exam 1:	Wednesday, September 22
Exam 2:	Wednesday, November 08
Final exam:	Friday, December 08, 12-3pm

In general, makeup exams will not be permitted. If you have a conflict with any of these exam dates, please let me know as soon as possible.

Homework Doing problems is the most important part of the course—it’s the only way to learn advanced mathematics! Written homework will be assigned and collected most weeks. A list of homework assignments with due dates will be posted on the course web page. Late homework will (normally) not be accepted for credit.

Please ask whenever you need help—I’ll gladly provide hints in office hours. You are encouraged to work with classmates while solving homework problems. Learning to explain clearly your own reasoning, and learning to understand the reasoning of others are important goals of this course. However, the work you turn in must represent your own personal understanding of the material. In particular, *you must write up your assignments by yourself*.

For each assignment, I will assign one or two “advanced problems.” These are required for students registered for MATH 6000. Students registered for MATH 4000 who hope to get an A should also attempt and turn in some of advanced problems during the semester. These problems will normally be due one week later than the “core problems” from the same assignment.

Attendance You are expected to attend class every day, read the textbook, and do homework regularly. Students who incur an excessive number of absences may be withdrawn from the course at the discretion of the instructor. (Excessive means four or more unexcused absences.) You are (strongly) encouraged to attend office hours; however, I expect that you will have thought about the questions you would like to ask before you come.

Academic Honesty *As a University of Georgia student, you have agreed to abide by the University's academic honesty policy, A Culture of Honesty, and the Student Honor Code. All academic work must meet the standards described in A Culture of Honesty found at: <https://ovpi.uga.edu/academic-honesty/academic-honesty-policy>. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.*

Disclaimer The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.