

Math 721 - Abstract Algebra I

Course Syllabus

Course Location

MWF 11:00-11:50 am, Manchester Hall, Room 124

Contact information

Name: Jeremy Rouse

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Office: Room 340, Manchester Hall.

Office Phone: (336) 758-4159.

Office Hours: Office hour days and times will be chosen based on the preferences of the students.

Course Information

Abstract algebra is the study of various algebraic structures and the maps between them. This course will focus primarily on groups, with an emphasis on their basic properties (Chapter 2 of the text), group actions (Chapter 6 of the text), and their applications (Chapter 7 of the text). At the end we will spend a couple of weeks on ring theory (Chapter 11).

I expect that this course will strengthen your skills in reading and writing proofs, disproving statements, thinking abstractly, conjecturing, and assessing your own understanding. A more detailed list of the course learning outcomes is posted at the website below.

Website: <http://www.wfu.edu/~rouseja/teaching/F2011/721/>

Textbook: Michael Artin's **Algebra**, 2nd edition. ISBN: 978-0-13-241377-0. (If you already have a copy of the 1st edition, that will suffice).

Weekly schedule

After class on Wednesday, a list of homework problems and a list of sections of the textbook will be posted on the class website (most of the homework problem will be related to material that has already been covered, but a couple of questions will be about the material you are to read).

The problems must be written up and turned in on the following Monday. Also, each student is responsible for sending me an e-mail before midnight on Sunday night asking some question about the reading.

Class on Monday will be devoted to answering the questions asked, clarifying any tricky spots, solidifying your understanding of the theory, and discussing the homework that was due.

Class time on Wednesday will be devoted to working through examples and the applications of the reading material for the week.

On Fridays, students will work (in groups of 2 or 3) on worksheets covering questions related to the material for the week (with occasional foretastes of material for the coming week).

(Note: There are a few weeks when this schedule will need to be revised to account for fewer class meetings and/or exams.)

Assessment

Submitting questions prior to classes on Monday will be worth 5 percent of the final grade. Attending and actively participating in the group work on Fridays will be worth 5 percent of the grade as well.

Each homework assignment must be attached to a cover sheet (posted on the course website), on which the answers to three questions must be given. The homework will be graded out of six points, three points for appropriately answering each of the questions on the cover sheet, and three for completing the assignment. I will only look in detail at your work on a problem if I am concerned, or if you specifically direct me to do so on the cover sheet. Homework will contribute 15 percent of the final grade. I encourage you to work together on the homework assignments, but you must write answers to the questions on the cover sheet on your own.

There will be two take-home midterm exams. The first will be given out on Monday, October 17 and due on Wednesday, October 19. The second will be given out on Friday, November 18, and due on Monday, November 21. While taking the take-home midterms, you may refer to your course notes and the textbook, but you may not discuss the exam with anyone other than myself. Each take home midterm will make up 20 percent of your final grade.

The final exam will be given from 2 pm - 5 pm on Tuesday, December 13, and will make up 35 percent of your final grade.

The function which maps percentages to letter grades will be chosen at the end of the course. However, if you earn at least 90 percent of the points, your grade will be at least an A-. If you earn at least 80 percent of the points, your grade will be at least a B-, etc.

Succeeding

I want all of you to succeed in this course, but that will not happen without the input of significant effort on your part. At a minimum, you must read the book and come to class prepared, participate actively in class, and complete the homework and turn it in. I would also encourage you to spend time reflecting on the material and your understanding of it. Discussing material with other students in the class and with me (during office hours) can also be very valuable.