MATH 331 Section 1
Abstract Algebra I
Fall 2008

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Course Web Page: http://www.fredonia.edu/faculty/math/JonathanCox/abstractalg/

*While these are the official office hours, I am available at other times as well. If you want to meet at a time outside of office hours, the best option is to set up an appointment with me. You can also just drop by any time, but you may want to call/email first to see if I'm there.
†You can also instant message me on AOL at JonathanCox1975—see the course web page. (Disclaimer: I am not at my computer 24 hours a day!)


Prerequisite. MATH 210 (Discrete Mathematics) and MATH 231 (Linear Algebra).

Catalog Description. Study of algebraic structures, such as groups, rings, integral domains, and fields. Basic homomorphism theorems for groups and rings are presented.

Course objectives. The purposes of this course for the student include (1) Becoming adept at using imagination to form conceptions of abstract mathematical objects and processes, (2) Further practicing and strengthening proof-reading and proof-writing skills learned in Discrete Mathematics, (3) Gaining an understanding of some fundamental concepts and techniques of group theory and basic ring theory, (4) Improving reasoning, conjecturing, and problem-solving abilities, and (5) Mastering how to read a mathematics textbook effectively.

Expected results. Our course web page includes a link to the departmental master syllabus for MATH 331. See the “Objectives” section of this master syllabus for a list of abilities you should expect to develop by the end of this course. This is more detailed and extensive than the list of course objectives given above.

Content and Methodology. The course will cover most of the material in Chapters 0-17 and 30 of the text. Typically, we will cover a chapter of the text in two or three meetings. Assigned readings from the text on each topic will be required prior to covering it in class. The beginning of each class period will be reserved for discussion of the homework and other questions. The remaining time will be used for presentation of new material via lecture and discussion, as well as through group work and fun activities to whatever extent possible. Students are encouraged to ask questions and make relevant comments at any time.
Readings. You will have a reading assignment to complete prior to most class meetings. One goal of the readings is to familiarize yourself with the terminology and definitions of each section and get a rough idea of its basic concepts before we discuss the section in class. The reading assignments will be posted on our course web page. Most reading assignments will include a few questions that you should be able to answer after completing the reading. See our course web page for guidelines for submitting reading questions. The reading assignments will be graded largely on completion, and will not be “returned” in the usual sense. However, I might occasionally respond to your submission with some comments, and at times I will compile select student responses for display and discussion in class.

Problem Assignments and Homework. Two types of homework will be assigned at almost every class meeting. Problem assignments will be collected and graded. No problem assignment (PA) will include more than two proofs. You will have one week (at least) to complete each PA. Feedback will be provided on all PA problems, and grading will be as detailed as time permits. Homework assignments will not be collected, but will often be discussed in class. No homework assignment (HW) will include more than five proofs. The HW problems provide an opportunity to deepen your understanding of concepts as well as valuable practice for PA’s and exams. At least one problem on each exam will be taken directly from the HW. In order to be successful, ask questions about homework problems (of either type) that give you difficulty.

Some projects and other special assignments might also be collected and graded. Due dates for graded assignments will be specified, and no late work will receive full credit, except in the case of an excused absence on the due date. (See the Attendance Policy section below.) I define work to be late if it is handed in after the beginning of the class period following the due date. Late work can still be handed in and graded, but will receive credit for only 50% of the points earned. However, no late work may be handed in after the last day of class or more than two weeks after the original due date.

I recognize the importance of timely feedback on your work, and will endeavor to return all graded material to you within one week. If it takes me longer than one week (excepting breaks) to return any item, I will add one point to the scores of everyone who submitted the item for each additional day that it takes me to return it.

Exams. The purpose of the exams is to determine your level of mastery of the concepts of the course. They will test not only your ability to memorize, but also your ability to think. There will be two 50 minute in-class exams and a 120 minute comprehensive final examination. The tentative dates of the in-class examinations are October 6 and November 17. The final exam will be given on Wednesday, December 17, at 1:30pm.

Normal make-up exams will be given only in serious and unavoidable circumstances, or in the event of an excused absence, and only if your request to make up an exam is approved by the instructor in advance or as soon as reasonably possible. Make-up exams must be taken within two class periods following the day of the exam. If these conditions are not satisfied, it is understood that the opportunity to make up the examination at that time is voided.
Grading and Evaluation. Performance in this course will be evaluated on a percentage system. The regular exams will constitute 40% of the final grade, so that each exam will end up being 20% of the grade. The problem assignments, together with any special assignments or projects, will make up another 28% of the grade. Reading assignments will determine 8% of your grade. The remaining 24% of the grade will be determined by the final exam. At the end of the course, your cumulative average (AVE) will be computed as follows.

\[ \text{AVE} = .40E + .24F + .08R + .28P \]

Your averages will also be updated regularly on ANGEL during the semester. Letter grades will be assigned as follows based on a student’s final percentage:

- 93 and above = A;
- 90-92 = A–;
- 87-89 = B+;
- 83-86 = B;
- 80-82 = B–;
- 77-79 = C+;
- 73-76 = C;
- 70-72 = C–;
- 67-69 = D+;
- 63-66 = D;
- 60-62 = D–;
- below 60 = F.

The instructor reserves the right to lower the grade ranges. The grade ranges will not be raised.

Attendance Policy. We will follow the SUNY Fredonia attendance policy. (See p. 219 and p. 239 of the 2007–09 undergraduate catalog.) Attendance is crucial to success in this course. You probably won’t be able to pass the course if you do not attend regularly. If you miss class even once, you might have difficulty catching up. If you must be absent, please notify the instructor ahead of time. An attendance sheet will be passed around each time the class meets. It is your responsibility to sign this sheet each period in order for your attendance to be official.

Work missed during an absence can be made up if the absence is determined by the instructor to be an excused absence. Your absence will be excused if you are participating in a university-sponsored program, exercising religious beliefs, hospitalized, or attending the funeral of a relative. Other absences due to unavoidable circumstances may also be excused at the discretion of the instructor. Appropriate documentation for an excused absence must be provided to the instructor within three days of returning to classes.

Special Accommodations. “It is the responsibility of students with disabilities to identify themselves by notifying the Coordinator of Disability Support Services for Students.... For specific information about services and facilities for students with disabilities, students should contact: Adam Hino, coordinator of Disability Support Services for Students, Reed Library (fourth floor), by telephone at (716) 673-3270, by TTY at (716) 673-4763, or by email at disability.services@fredonia.edu” (p. 217, 2007–09 SUNY Fredonia Catalog). See also www.fredonia.edu/tlc/DSS/dss.htm .

Withdrawal Policy. The drop and withdrawal policy for this course will be that of the University. (See p. 218 and p. 223 of the 2007–09 SUNY Fredonia Catalog.) IT IS YOUR RESPONSIBILITY TO KNOW AND COMPLY WITH ALL DEADLINES. The last day to DROP this course is Friday, August 29. The last day to WITHDRAW from this course is Friday, October 31. The last day to completely withdraw from the university is Monday, December 1.

Daily schedule. A tentative daily schedule for this course is available online at http://www.fredonia.edu/faculty/math/JonathanCox/calculus/sch331f08.pdf .
Academic Integrity. Each student is expected to “support and abide by all provisions of the ... Academic Integrity Policy” (pp. 236-239 in the 2007–09 SUNY Fredonia Catalog). While we will follow this policy, more details are given below regarding what behavior is or is not allowed in this class. Please ask me whenever it is unclear whether something is or is not allowed.

You are encouraged to work together on homework and in learning the material. While working with another person or in study groups is permitted, all written work submitted for individual assignments must be your own. The principle here is simple: Under no circumstances and in no way should you ever copy any part of anyone else’s work and present it as your own. Here are some examples: 1) If you discuss hand-in homework with a group before doing it, afterward go off and write up the solutions yourself. 2) If you compare solutions with a friend and have different answers, neither should correct his solution using the other’s. You can try to figure out who went wrong where, and then go off and rework the problem on your own. 3) If a tutor gives you some hints on how to do a hand-in problem, do not just copy what the tutor wrote as part of your solution. Instead, think about the hints and then attempt the problem on your own. This list is meant to be illustrative, not exhaustive. Further elaboration will be provided in class as needed. When copying or other academic misconduct occurs, a student might lose points or receive a grade of zero on the item in question. Ultimately, in order to be successful in learning the material and preparing for the examinations, you need to try to work out assigned problems yourself as much as possible. Otherwise you are cheating yourself.

Any changes to this syllabus will be communicated in class by the instructor.

Suggestions for Additional Reading and Reference


