MATH 521A Abstract Algebra Spring 2014

ROOM/TIME: 4–5:15pm MW AH-2103 (Adams Humanities)
INSTRUCTOR: Dr. Hiren Maharaj Office: GMCS-510
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OFFICE HOURS: TBA
Text: Abstract Algebra, an introduction by Thomas Hungerford, third edition

Grading:
Your course average will be computed with the following weights:
- 3 Midterms $3 \times 19\%$
- Quizzes 5%
- Homework 13%
- Final Exam 25%

Your grade is assigned according to your course average. Your lowest midterm score is replaced by your final exam score if that improves your grade. However, a score of less than 60% in the final exam will result in a fail grade for the course.

Your grade is assigned as follows:
- A is 94 to 100%, A- is 90 to 93%, B+ is 87 to 89%, B is 84 to 86%, B- is 80 to 83%, C+ is 77 to 79%, C is 74 to 76%, C- is 70 to 73%, D is 60 to 69%, F is below 60%.

Tentative midterm dates:
- Midterm 1: Feb 12 (section 1.1 to section 2.3)
- Midterm 2: Mar 12 (sectin 3.1 to section 5.3)
- Midterm 3: Apr 16 (section 6.1 to section 7.5)

Final exam date: Monday May 12, 3:30 to 5:30, in class.

Homework is always assigned but not always collected. Homework will be assigned almost daily. These typically consist of 5 to 10 problems and a selection of 5 problems will be graded. Typically four points per problem.

There will be a quiz every Monday (unless we have a midterm that week) for about 10 minutes. The quizzes will mainly test definitions covered the prior week.

Doing exercises is an important part of the learning process in mathematics. Feel free to work with your colleagues on the homework assignments, but remember that copying is not permitted. Exams are to be completed alone without the use of calculators, notes, or assistance from others.

All tests and quizzes will be graded based on the work shown, not on just the final answers. Each successive midterm will only test on work covered since the previous midterm. The final exam is mandatory and comprehensive.

Attendance Policy: All students are expected to be regular and punctual in their class attendance. A quiz will likely be given on each day during which there is not a major test. Should a student miss any test, a grade of 0 will be assigned unless a very good excuse (eg. medical emergency) exists. If the instructor does not arrive in the classroom within 30
minutes after the scheduled start time, the class is dismissed for the day.

**Course Description, Relevance, and Learning Outcomes**

Course objective: This is the first semester of a year-long course in abstract algebra. We will cover some elementary number theory and the fundamental concepts of group theory. Specifically we will cover the first 8 chapters from the text. Time permitting we will cover chapter 13 and parts of chapter 16)

There will be a strong emphasis on the students’ ability to effectively communicate mathematical ideas in writing. This will be stressed throughout the course. The course does have a strong abstract component so proofs do play a major role. However, I will emphasise down-to-earth examples as well and there will be plenty of opportunities for computation. Over the past few decades, there have been many major applications of abstract algebra, in particular number theory, especially in the efficient transmission of information and also data security. Thus the material of this course would be of interest to computer scientists and engineers, as well of pure mathematicians. In order for the become proficient at the material on this course, expect to devote a lot of time to study outside class. Make sure you do your homework, that you understand your notes and you take the time to read your text as well.

**Key dates**

January 22 First day of classes.
January 31 Last day for faculty to drop students from classes.
February 4 Last day to add/drop classes or change grading basis.
February 4 Last day for payment of fees for late registration. (3:30 p.m. deadline.)
February 4 Last day to officially withdraw from the university for spring semester 2014.
March 21 NCAA Tournament. No classes. Campus open.
March 25 Last day to officially withdraw from all classes for spring 2014 and receive a prorated refund (withdrawal after February 4 requires special approval and a penalty fee is assessed).
March 31 Holiday  Cesar Chavez Day. Faculty/staff holiday. Campus closed.
March 31-April 4 Spring recess.
April 7 Classes resume.
May 8 Last day of classes.
May 9-15 Final examinations.
May 20 Grades due from instructors. (11 p.m. deadline.)
May 20 Last day of spring semester.