Math 103b Winter 2008: Applied Modern Algebra part 2

MWF 3-3:50pm, Solis Hall 110
Professor D. Rogalski

1. CONTACT INFORMATION

Prof. Rogalski's Office: 5131 AP&M

E-mail: drogalsk@math.ucsd.edu

Class web site: *www.math.ucsd.edu/~drogalsk/103b.html*. Check here for announcements, homework assignments, and the lecture and exam schedules.

Office hours: TBA

Section Leader: Andre Harmse

E-mail: jharmse@math.ucsd.edu

Meeting Times: Th 3-3:50pm, York 4080A

Office hours: TBA

2. BASIC COURSE INFORMATION

• **Course description** This is a second class in abstract algebra. The main topic is the theory of rings and fields. Math 103a is technically a prerequisite, because we will be going faster in 103b and I will assume you have developed a certain amount of algebraic intuition. However, the two courses are actually pretty independent, so if you have not had Math 103a and you really want to take this course please come talk to me; depending on your individual circumstances this might be OK.

• **Textbook** The textbook is *Contemporary Abstract Algebra* by Gallian, 6th Edition. We will cover portions of Chapters 12-23 of the book, Chapter 31, and some supplementary material not in the text (time permitting). If you have the 5th edition of the book, you need to check with a friend who has the 6th edition to make sure you do the right homework exercises—problem numbers always refer to the 6th Edition.

One copy of the textbook will be placed on reserve in the Science and Engineering Library; however, it will be the 5th Edition (the most recent the library owns.)

• **Homework** Homework will be assigned weekly, except on exam weeks; the list of problems for the week will be available on the class website (follow the links on the course calendar). Homework will be due Friday in class. Late homework will not be accepted, but the lowest homework score will be dropped. The homework will be a mix of straightforward problems which help you to work through the definitions and concepts, together with more challenging problems. You should expect to spend a lot of time thinking about some of these exercises before the solution is clear to you (start the homework early!), and the write-ups

you submit should be clear, neat, and well-organized (not rough drafts). A thorough working-through of the homework exercises is the key to success in the class. *You are welcome to discuss the homework problems with other students, but the write-up you hand in should be your work only. See also the section below about academic honesty.*

- **Course calendar** The schedule of what we will cover when will be available on the course website. Check it frequently because the schedule is subject to change and the online calendar will be updated accordingly.

- **Exams** There will be 2 in-class midterms on Wednesday 1/30/08 and Wednesday 2/27/08, and a final exam on Wednesday 3/19/08 from 3pm-6pm. Bluebooks will not be needed; adequate room will be provided on the exam paper for your answers. No books, notes, or calculators are allowed during exams, unless I decide otherwise in advance. The Final Exam will be cumulative and roughly the length of two midterms.

- **Office Hours** Both I and your TA will have several office hours a week where we will be available for your questions. Please make an appointment (either ask in person or send an e-mail) with one of us if you cannot make the regularly scheduled office hours.

- **Grading** Your final average will be calculated as follows: Homework 25%, Midterms 25%, Final Exam 50%. Then your grade will be at least as good as the grade given by the following standard scale:

97	93	90	87	83	80	77	73	70	60
A+	A	A-	B+	B	B-	C+	C	C-	D

The final grading scale will almost surely be much more lenient than this ("curved") depending on the class average.

3. ACADEMIC HONESTY

Academic honesty is important to me and I expect you to abide by the university's policies. Serious cases of dishonesty may be reported to the appropriate university committee. The most straightforward kind of cheating which is obviously disallowed is copying from a neighbor's exam, or consulting notes or the book during an exam.

The honesty rules for homework are sometimes less obvious. So there is no confusion, here are my particular rules.

1. The homework you hand in should be your own written work, and your own only. It is not acceptable to copy word for word, or paraphrase, the work of another student in the class, or a solution found (say) on the internet or in a solutions manual, and hand it in as your own work.

2. You may work with others in the class (I am all for this), but be careful not to violate rule 1 above. Certainly you can freely discuss definitions, examples in the text, etc. with others to help you understand them. For the homework problems, it is best to start by thinking about the problems yourself, hard. You may see how to do some of them, but be stuck on others. Wait a while, you will probably have additional insights the next day (this is one reason it is important to start the homework early). You can ask us or a friend for hints. Hopefully after more thought you will see how to solve the ones you were stuck on. If not, and here and there a friend tells you how to do a problem you were completely stuck on, and then you write it up yourself using only your own understanding, that's OK. But this should only be a problem here or there, not a significant fraction of them, or else you won't learn how to work through these problems independently.

3. Just to clarify further, reading through a friend's entire solution to a problem *which you did not think about yourself* and then immediately writing your own solution is not allowed. You are likely to end up writing a paraphrase of the other solution and not really understand the proof, and you won't gain the benefit that comes from thinking long and hard about the problems.