Math 100c Spring 2015: Abstract Algebra III
MWF 1-1:50pm, Solis 109
Professor D. Rogalski

Professor: D. Rogalski, office 5131 AP&M
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Class web site: *www.math.ucsd.edu/~drogalsk/100c.html*. Check here for announcements, homework assignments, schedule of lectures, and other information.
Office hours: M 11am-12pm, W 2-3pm in 5131 AP&M

Section Leader: Corey Stone, office 6331 AP&M
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Meeting Time: Tu 4pm in B412 AP&M
Office hours: Tu 2-3pm, Th 4-5pm in 6331 AP&M

• **Course description**
Math 100c is the third quarter of UCSD's three-quarter abstract algebra course. It is aimed to prepare students for graduate study in mathematics. The main topic is Galois Theory (the theory of fields).

• **Prerequisite** The prerequisite is Math 100a-b. Only students who have done well in Math 100a-b should take Math 100c. Please come talk to me if you have not met the prerequisite but still feel that this is the right course for you.

• **Textbook** The textbook is *Abstract Algebra* by Beachy and Blair, 3rd edition. With material at this level, it is very helpful for you to see difficult concepts (at least) twice, once in class and once in your reading. Sometimes I may also omit from the lectures some less important details or proofs and leave it to you to learn them from your reading. Thus I think it is crucial that you both attend lecture and read the book. We will cover Chapters 6 (except Section 6.7) and 8 this quarter, and some of the end of chapter 7 (7.6 and 7.7). Time permitting, we may cover at the end of the quarter some additional topics in Galois theory not in the text. We will roughly follow the order of the text, covering Chapter 6 and then Chapter 8, with the material from Chapter 7 inserted when it is needed.

• **Podcasts** Due to the small size of the class, I do not plan to podcast our lectures this quarter as I did in the fall for Math 100a; it requires me to wear a microphone, which is awkward in a small room. If you need to miss lecture, please obtain the notes from a classmate.

• **Homework**
Homework will be assigned weekly and due on Fridays by 3pm in a dropbox in the basement of AP&M. You can also hand your homework to me in class if your prefer, but we won't accept

homework sent by e-mail. The first homework will not be due until Week 2, and we will skip a week around the time of the midterm. The lowest homework score will be dropped.

The most important part of the course is the homework, and in my experience students that do little or no homework do not do well, as it is not possible to prepare for the exams properly without working through the homework. Along with more straightforward problems designed to solidify the basic definitions and concepts, the homework will contain some problems which I expect you to find difficult and are meant to challenge you.

Note that solutions to homework problems will not be provided. You can ask the TA's or friends for hints on problems on which you had trouble, but I feel that you learn much less from just reading someone else's solution. Handing in a solution copied directly or paraphrased from an online source is academically dishonest. The homework you hand in should reflect your own understanding of the problems.

The exercises in this course demand more creative thinking than the typical exercise in a more computationally-oriented lower division course. Creative mathematical thinking often unfolds over time, with new insights emerging the second time or third time you think about a difficult problem. For this reason it is crucial to start homework early and work on it over the week, and not begin it the day before it is due.

• **Exams**

There will be 1 in-class midterm: Monday May 2 (week 6); I plan to try to arrange a selection of 2-hour slots so that students have two hours to complete the midterm— stay tuned for announcements about this. The final exam will be Thursday June 9 from 11:30am-2:30pm. Please bring your own bluebook to each exam. No books, notes, calculators, phones, or other aids may be used during exams. The final exam will be cumulative.

• **Office Hours**

Both I and your TA will have several office hours a week where we will be available for your questions. These will be announced later and posted on the website. If on an occasional basis you need to see one of us and can not make a scheduled office hour, please e-mail one of us to set up an appointment.

• **Grading**

Your final average will be calculated using the following grading scheme: Homework 25%, Midterm 25%, Final Exam 50%. Please let me know as soon as possible if you believe you have a conflict with a midterm or with the final exam.

Your final 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 be curved depending on the class average.

• **Collaboration and Academic Honesty**

You are welcome to discuss the homework problems with other students at the stage when you are still formulating ideas. This may be especially useful if, for example, you are confused about definitions or what the problem is asking. The write-up you hand in should be your work alone in your own words, however, and should be written while you are by yourself. While it is also OK to seek hints from classmates that have figured out problems on which you are stuck, you will learn the most if you think about these problems hard on your own first and don't give up too quickly.

Copying or paraphrasing the finished writeup of a homework problem in whole or in part from a classmate or from any other source such as the internet, and then handing it in as your own work, constitutes academic dishonesty. As usual, copying from or talking with a classmate during an exam, or using books, notes, calculators, phones or any other aids during an exam are also not allowed. I will not hesitate to bring charges of academic dishonesty if necessary in such cases.