MATH 224 – SPRING 2008 – GENERAL INFORMATION

Instructor. Tara S. Holm
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Office hours: M 2:30pm–3:30pm, TuTh 1pm–1:30pm.
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Office hours: TBA – Monday morning?

Lectures. TuTh 11:40am–12:55pm in 224 Malott.
Section. W 7:30pm–9:55pm in 532 Malott?

The Course. Math 224 is an advanced and rigorous introduction to linear algebra and multivariable calculus. The material in the course will be presented in a concrete but rigorous fashion – we will use examples to illustrate and gain intuition for the theory and will use proofs to understand and mathematically justify the theory. Major goals of the course are for you to develop the ability to read and write mathematical proofs and to become an active participant in learning and understanding mathematics. This is a demanding course: you should expect to work 10–15 hours (or more!) per week outside of lectures. Nevertheless, the rewards are well worth the effort. You will discover firsthand the beauty and fun of mathematics!

Textbook. The course text book is *Vector Calculus, Linear Algebra, and Differential Forms: A Unified Approach, 3^{rd} Edition*, by John H. Hubbard and Barbara Burke Hubbard. It is available at the campus bookstore and online at http://www.matrixeditions.com/. A student solutions manual for the 3^{rd} Edition should be available soon at the same website.

Please take 15 or 20 minutes before each lecture to read the sections of the books that will be covered. It helps to be familiar with the terminology we will use and the theorems that we will discuss. The lecture schedule will be available on the course web site.

Warning: There will be some correlation between our text and the lectures, but we will cover material that is not in the book, and we may do some things differently. *What matters for the exams is what material is covered in lectures and in the homework!*

Academic integrity. As always, you are expected to abide by the Cornell Code of Academic Integrity. This states, "A Cornell student's submission of work for academic credit indicates that the work s the student's own. All outside assistance should be acknowledged, and the student's academic position truthfully reported at all times."

Homework. There will be approximately twelve problem sets over the course of the semester. Your lowest problem set grade will be dropped when computing your final homework grade.

No late homework will be accepted!

Problem sets will be handed out roughly every Tuesday, and will be due the following Tuesday. You may work together on your assignments, and you are encouraged to do so. However, you must write up your final solutions **by yourself**. Your work must be written neatly and legibly. Proofs should be written in complete English sentences. Your homework score will be determined not only by the correctness of the responses, but also by the correctness of the grammar.

Projects. Every student will hand in a written project. This should involve learning the material for a subject **not covered** in class, roughly a week's worth of material. You will then write up an exposition of the mathematics you have learned, including motivation, examples, at least one theorem, and at least one proof. You must meet with me to get your project approved. The time table for these projects is:

- February 29, 2008: Your topic must be approved.
- March 27, 2008: Outlines due (Thursday after spring break).
- April 17, 2008: If you hand in a rough draft by this date, I will return it within a week with comments and suggestions. There is no grade penalty for this. Your are not required, but strongly recommended, to take advantage of this option!
- May 2, 2008: Projects due by **noon**!

Exams. There will be one prelim and a final exam. The prelim will be a take-home exam: you will be allowed to consult your text and your course notes, but you should not discuss the exam with your fellow students. You will have one week to complete that prelim. The final exam will be a timed exam, closed-book, no calculators. These will take place as follows.

Prelim: handed out March 4, due on March 13, 2008.
Final Exam: Wednesday, May 14, 2008, from 2:00pm until 4:30pm.

Grading policy. For computing final grades, the components will be weighted in the following way:

Prelim – 20%,
Problem sets – 30%
Project – 25%, and
Final exam – 25%.

If you have questions about homework, exams, or grades, please come talk to me during my office hours or send me email.