Math UN1208: Honors Math B
Mondays/Wednesdays, 4:10 - 5:25 in 312 Math

Instructor: Evan Warner

Office hours: Tuesdays 9:00-11:00, Fridays 1:00-2:00 in 512 Math

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TAs: Sayan Das, Ahmed Sheta, and Carson Teitler; help room hours are Wednesdays 9:00-12:00, Tuesdays 12:00-2:00, and Mondays 9:00-11:00, respectively in 406 Math

Course description: This is the second semester of a rigorous, accelerated introductory course in calculus and linear algebra. The course material will be theoretical rather than applied, and it is expected that students will develop facility in reading, understanding, devising, and writing proofs. Our study of linear algebra will cover linear independence, rank, determinants, orthogonality, and eigenvectors, culminating in the spectral theorem. We then turn to vector calculus, aiming for the famous theorems of Green, Gauss, and Stokes.

As in the previous semester of this class, you should expect to work considerably harder in this class than in a normal calculus class; this is reflected in the fact that each semester of Honors Math counts for 4 credits instead of 3, and students who complete the courses need not take Linear Algebra (Mathematics V2010). The prerequisite is the first semester of this course (Math UN1207) or the instructor’s permission.

Textbook: Tom M. Apostol, *Calculus*, 2nd edition, Volume II (Wiley). Reading and written assignments will be drawn from this text. Note that the last two chapters of Volume I are repeated in Volume II. We will cover, approximately, Ch. 1-5, 8, and 10-12.

Assignments and exams: Homework will be assigned weekly and will be due at the beginning of class each Wednesday, starting the second week. If you are unable to attend class, homework should be handed in via the appropriate box on the fourth floor of the math building. No late homework will be accepted without prior approval; however, to take care of the occasional lapse the lowest homework score for each person will not count towards their final grade. I recommend you not use this “free pass” too early in the semester! You should attempt every homework problem and are responsible for understanding how to solve them for the purpose of exams. Collaboration and discussion with your classmates is encouraged, but each assignment must be written individually, in your own words. In particular, do not exchange any written work with others and do not use any sources for a given problem that trivialize that problem.

In addition to the problems that you are to hand in, there will be some supplementary problems. You are expected to try these and (eventually) understand how to solve them as well, but they will not be graded. They might make good exam practice problems. Finally, each assignment will include some reading in the textbook (up to 40 or 50 pages, perhaps more on occasion). Much of this will duplicate what is in the lectures, but not all, and you are responsible for understanding the content of both.
There will be one in-class midterm, on Wednesday, March 11, and a final exam, which is provisionally scheduled for Monday, May 11T from 4:10 until 7:00. Make travel arrangements ahead of time accordingly. Makeup exams will be given only under exceptional circumstances and you will need a note from a doctor or dean. Grades will be based 40% on homework, 20% on the midterm, and 40% on the final.

**Extra help:** If you are unable to make the office hours, feel free to email me to schedule an appointment. Additionally the Columbia Help Room (406 Math) is available without appointment when it is open.

**Disability accommodations:** If you have an exam accommodation through Disability Services, please let me know at least two weeks in advance so that the paperwork can be completed with enough time in advance to make the necessary arrangements.

**Academic dishonesty:** As a general policy, the use of electronic devices during exams is not allowed. Anyone found to have cheated on an exam will receive a failing grade for the course and be subject to administrative discipline. Cheating on assignments (e.g., copying written work from somebody else) will also normally trigger administrative disciplinary procedures. Fortunately, the vast majority of students do not cheat in classes like this. Please come to me (or use another resource) if you are struggling with the material instead of resorting to cheating.