Fall 2019 Math 61CM: Modern Mathematics: Continuous Methods

Course webpage

Instructor
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Teaching assistant
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Prerequisites
Score of 5 on the BC-level Advanced Placement calculus exam, or consent of the instructor

Lectures
MTuWTh 9:30am-10:20am, 380-380Y

TA session
F 9:30am-10:20am, 380-380Y

Office Hours
TuTh 3pm-4:30pm for JL at 382Z; M 5:15-7:15pm, W 5:35-7:35pm, F 10:30am-12:30pm for AD at 380J.

Textbook
An Introduction to Multivariable Mathematics by Leon Simon. The textbook is accessible on the web via the address
http://www.morganclaypool.com/doi/abs/10.2200/S00147ED1V01Y200808MAS003 if you are on campus. (If you are not on campus, you will first need to configure your browser: http://www-sul.stanford.edu/apcproxy/index.html.)

There will also be extra handouts available from the course website.
Topics of the course

Vector spaces, linear maps and duality, eigenvalues, inner product spaces, spectral theorem, metric spaces, differentiation in Euclidean space, submanifolds of Euclidean space as local graphs, integration on Euclidean space, and many examples.

Schedule

The schedule is posted on the course webpage in a separate file. Note that during the first six weeks, the linear algebra lectures will be held jointly with DM.

Learning to write proofs

In this course, you are expected to learn to write mathematical proofs. The TA (jointly with the TA from DM, Yuval Wigderson) will hold three sessions on proof-writing on Wednesdays 9/25, 10/2, 10/9 from 5:30-7:00pm, at locations to be announced.

Homework assignments

- There will be nine homework assignments. Assignments can be found on the course website (at least) one week before it is due.
- Homewors are due on Mondays (starting Week 2) during lectures.
- No late homework will be accepted without prior approval from the instructor.
- You may (and are in fact strongly encouraged to) discuss the homework problems with others in the class, but you must write up your own solution. Also, please write down the names of people who you have discussed with on your problem sets.
- Homeworks will be graded for clarity of exposition (write in complete sentences!) as well as correctness. Solutions will be posted, and you are strongly encouraged to review these solutions to learn other ways to look at the problem, etc.
- The final score for the homework assignments will be calculated as the average of all of the assignments, each with an equal weight.

Examinations

- There will be two midterm examinations in total. The first will be on the Tuesday of Week 4 and the second will be on the Tuesday of Week 8. The exams will be held at 7-10pm at a location to be announced.
There will be a final examination on December 10, 12:15-3:15pm, at a location to be announced.

Makeup midterm examinations are only available to students with a clash with other classes or in an exceptional situation with prior approval by the instructor. If this applies to you, you should contact me immediately, and no later than the end of Week 1.

The final exam is scheduled by the registrar’s office and no makeup exams will be available.

All examinations will be in-class, closed books, closed notes, closed internet etc.

Grading policy
The grade will be based on the homework assignments (30%), the midterm exams (20% each) and the final exam (30%).

OAE Accommodation
Students who may need an academic accommodation based on the impact of a disability must initiate the request with the Office of Accessible Education (OAE). Professional staff will evaluate the request with required documentation, recommend reasonable accommodations, and prepare an Accommodation Letter for faculty dated in the current quarter in which the request is being made. Students should contact the OAE as soon as possible since timely notice is needed to coordinate accommodations.

If you have an accommodation letter from OAE, please contact me immediately, and no later than the end of Week 1.

Course related expenses
All students should retain receipts for books and other course-related expenses, as these may be qualified educational expenses for tax purposes. If you are an undergraduate receiving financial aid, you may be eligible for additional financial aid for required books and course materials if these expenses exceed the aid amount in your award letter. For more information, review your award letter or visit the Student Budget website https://financialaid.stanford.edu/undergrad/budget/index.html