Course Objective

Our objective this quarter is threefold. First, we seek to complete our study of multivariable calculus begun in Math 413, culminating in vector-valued statements of all our grand theorems of calculus. Our second objective this quarter is to see two generalizations of the Riemann integral; one to $\mathbb{R}^n$ and one still on $\mathbb{R}$ but leading into interesting function spaces. Finally, the year of analysis will culminate with a month-long study that we will choose from a list of candidate topics toward the middle of the quarter.

Methodology

Our high ambitions will necessitate various vehicles for progress.

1. Discussion. Class time will be spent discussing and working on mathematics. Your engagement in the discourse is vital. You may be called upon to offer your thoughts. You will get out of this class only what you put in.

2. Homework. Homework is assigned on Fridays and due the subsequent Friday. Homework is by far the most important aspect of this course. Ours is a beautiful and powerful subject, but there is a cost in sweat and tears to sharing in its delights. Immerse yourself in your work, be patient and persistent in your efforts, and do not settle for a passing acquaintance. Your rewards shall be myriad.

3. Examination. There will be one midterm and a final exam at the end of the quarter.

4. Query. Two students will be drawn randomly for a daily query at the beginning of each class.

Grading Policy

The midterm and homework will each count 30%, the final will count 35%, and the query will count 5%.
Office Hours

Our in-class discussions will likely be the proverbial “tip of the iceberg.” To facilitate sustained mathematical discussion, there will be additional times to meet throughout the week.

- M 9:10-10:00.
- T 2:10-3:00
- W 9:10-10:00.
- R 9:10-10:00.
- By email and appointment.

Exam Dates

- **Midterm:** Friday, May 6th in class.
- **Final Exam:** Wednesday, June 8th, 10:10am-1:00pm

Academic Integrity

It is my opinion that there is hardly any human act more satisfying or important than the sharing of knowledge. I therefore consider the classroom and the university at large to be hallowed ground, well deserving of all the humility and respect that we would afford our other most sacred places.

Please refer to the University’s policy on cheating and plagiarism found in the Campus Administration Manual, Section 684.

In short: be sensible, respectful and mindful of the integrity of the system we are all so lucky to share.