Math 110 (Fundamental Concepts of Analysis) — Fall 2018
George J. Schaeffer — Department of Mathematics, Stanford University
Course Information and Policy Document

Course Staff
Dr. George J. Schaeffer — Lecturer
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* Please read the Online Interactions section below before emailing us. Importantly, questions on problem sets will be answered using Piazza, and not by email.

Course Website
The course website is http://stanford.edu/~gschaeff/171-18f/. All course materials will be available on the course website or linked from it. We will not be using Canvas this quarter, (or any other quarter, so long as I’m in charge!).

Syllabus
Math 171 is a 10-week course on analysis. We will cover the axiomatic treatment of the real numbers, the topology of metric spaces, sequences of functions, theories of differentiation and integration, norms and inner products. Time permitting: measure theory and basic functional analysis.

Writing in the Major
Math 110 is a WIM course. All students will complete a 4–6 page project (typeset in LaTeX) on a relevant topic of their choice. More details will be given about halfway through the quarter.

Textbook
The textbook for this course is Foundations of Mathematical Analysis, by Johnsonbaugh and Pfaffenberger.

Course Organization and Materials
In a typical week you will attend three lectures and complete one problem set. The course staff will also hold regular office hours during the week.

Because of time constraints it is unlikely that we will be able to cover every nuance of the material in the Greatest Possible Detail during lectures, which is why I will occasionally assign required readings in the textbook or that I have written up for you myself.
You are responsible for all material covered in lecture, all assigned readings and handouts, and any supplemental material presented in problem sets.

Online Interactions
If you have questions about the course, we are here to help! However, please follow these guidelines to streamline issues that may arise outside of class and office hours:

- **Administrative issues/concerns** (OAE accommodations, emergencies requiring an extended absence, etc.) should be directed to me (Dr. Schaeffer) by email.
- **Questions about course material** (e.g., on homework or examples from lecture/discussion) should be submitted to Piazza. Please do not email such questions to the course staff! Trust me—it’s better this way for all of us.
- If you notice a *typographical (or mathematical) error* in a file, please email me (Dr. Schaeffer) immediately—don’t be shy, I make these fairly often.
- Emails/Piazza posts received outside of regular work hours (9 AM–5 PM, Mon–Fri) will naturally receive replies at a slower pace. Please remember that we also have personal lives and responsibilities outside of this class! :)

Homework
The problem sets in this class are of central importance and will generally be *rather long*. In addition to asking you to demonstrate what you’ve learned so far, problem sets will develop new material, and they will assist you in developing and practicing your proof-writing skills. Your assignments will therefore be evaluated based not only on completion and correctness, but also on how well you communicate what you are doing. **It is a very, very good idea to start the problem sets early.**

There will be a total of seven graded problem sets during the course. These will be submitted via an online service called Gradescope (more details to come), due by 10 AM on Friday the week after they are assigned. Late assignments will be accepted up to one day after the due date, but will receive a penalty at the instructor’s discretion.** Solutions will be posted to the course website shortly after the late submission deadline has passed.

Collaboration on problem sets is permitted as long as it is beneficial to your understanding of the material. **Copying someone else's homework is a violation of the Stanford Honor Code; your solutions must be your own.**

Your lowest score on a problem set will be dropped. This policy is in place to accommodate any emergencies that prevent you from submitting your work on time; you are still responsible for the material contained in the assignment, and you should not use it to "skip" an assignment.

LaTeX
Problem sets 3–7 and your WIM paper must be submitted in the form of a PDF produced using LaTeX—this is the established method for typesetting professional mathematical documents.

Examinations
There will be two exams during this course:
- Midterm Exam: Administered on **Wednesday, October 24th, 5-6:30, location TBA**.
- Final Exam: Administered on **Thursday, December 13th, 8:30-11:30 AM, loc. TBA**.

The Final Exam will be cumulative but will emphasize material covered after the Midterm Exam.

Students with accommodations from the OAE must make arrangements with Dr. Schaeffer for each exam (with notification at least one week prior to the exam date), and Dr. Schaeffer must have received your letter from the OAE before the accommodated exam is administered.

**Make-up exams will not be given.**

(**) Late and Make-up Work Policies
The general rule is that homework assignments turned in more than a day after the due date are not accepted and make-up exams are not given. Exceptions are guaranteed only for students with planned religious observances who inform me (Dr. Schaeffer) well in advance.

Please notify me immediately by email if there is any situation that will interfere with your work in this class, and we can discuss our options.

**Determination of Grades**
Your numerical grade will be partitioned according to the following scheme:
- Problem Sets: 24%
- WIM: 11%
- Midterm Exam: 25%
- Final Exam: 40%

Once numerical grades have been computed, letter grades will be assigned according to an impartial and nonnegotiable scale to be determined.