

**Math 104**  
**Introduction to Analysis**  
SPRING 2009

**Instructor:** Shamgar Gurevich, Office: 867 Evans Hall, Phone: 643-7543.

**Time and Location:** M-W-F 3-4pm, Room 75 Evans.

**Course Webpage:** <http://math.berkeley.edu/~shamgar>

**Office Hours:**

Mon. 1:30-2:30pm

Wed. 1:30-2:30pm

**Textbook:** Walter Rudin, Principle of Mathematical Analysis.

**Syllabus:** Real and complex numbers, basic topology, sequences and series, continuity, differentiation, integration, sequences and series of functions, linear algebra, Fourier series and integrals.

**Grading:** There will be weekly assignments which will be due in one week, a midterm exam and a final. They will count toward the grade as follows:

Assignments	30%
Midterm	30%
Final	40%

**Attitude:** In our course we will study some basics of analysis. The attitude will be to help you to develop your way on how to think about some mathematical objects that you will encounter during your undergraduate studies. Moreover, I expect you to be an integral part of the course. i.e., to attend lectures, to participate in the discussions, to submit homework, and to visit me during my office hours.

**What:** We intend to cover all the basic material so we can understand why a nice function on the circle can be written as a linear combination of exponential functions  $e_n(x) = e^{2\pi i n x}$ ,  $n \in \mathbb{Z}$ . In particular I hope to formulate, explain and prove the Stone-Weierstrass theorem.

**Good Luck!**