

Math 20300: Analysis in \mathbb{R}^n

Instructor: Dr. Gabriel S. Koch
Office: Eckhart 305B
E-mail: koch@math.uchicago.edu
Website: www.math.uchicago.edu/~koch

Class Meetings: MWF 12:30 – 1:20, Eckhart 202
Office Hours: MWF 1:30 – 2:45, Eckhart 305B (my office)
...or by appointment*

*If you can't make my regular office hours, please e-mail me to arrange a meeting at a different time.

Course text: "Tools of the Trade" by Paul J. Sally, Jr.
Suggested reading: "An Introduction to Analysis, 3rd Ed." by William R. Wade

Material:

The course will start with a review of real and complex numbers and convergence of sequences and series in those spaces. There will then be a short segment on linear algebra, treating the geometric structure of \mathbb{R}^n as a vector space. Thereafter, the majority of the class will be spent on the analytic structure (distance, convergence, completeness, open and closed sets, compact sets, etc.) of \mathbb{R}^n as a metric space, and on the abstract notion of a metric space in general with examples other than \mathbb{R}^n given. All material will come from the book of Sally, but students who would like another source are encouraged to read from Wade, which is on reserve in the mathematics library. Students are not required to buy Wade for this course, but you may want to keep in mind that it is the book which is currently being used for math 20400 and 20500 which many of you may go on to take.

Student Evaluation:

Students will be evaluated through homework assignments, at least one midterm exam and one final exam. All grades will be curved as the instructor sees fit.

There will be approximately one homework assignment per week. You may discuss the material with your classmates, but **you must complete the problem sets on your own**. Identical papers will not receive credit.

Good luck!