

PRINCIPLES OF ANALYSIS
MA 575 SECTION 001 – FALL 2017

Syllabus

Instructor: Francis Chung
Office: 727 Patterson Office Tower
Office Hours: Tuesday 10-11, Wednesday 3-4 or by appointment.
Email: fj.chung@uky.edu
Class Meetings: MWF 2-3, CB 343.

Course Content and Goals The goal of this course is to start from “scratch” (and we’ll discuss what that means) and develop a rigorous theory of basic real analysis. This means that includes a theory of real numbers, continuous functions, limits, differentiability, (Riemann) integrals, sequences, and series. Whenever possible, we’ll use the language of (point-set) topology and metric spaces: this means we’ll discuss ideas like open and closed sets, limit points, connectedness, compactness, and convergence. This course is also intended to bring students’ proof writing skills up to a graduate school standard, starting with basic axiom-and-definition driven proofs and advancing to theorems at the level of the Heine-Borel and Bolzano-Weierstrass theorems, with more complex layers of ideas.

Course Texts There are no required texts for this course. However several books work well as references. Past versions of this course have required *Analysis: An Introduction* by Richard Beals. Other good books covering similar material include *Calculus* by Michael Spivak, *Principles of Analysis* by Walter Rudin, and *Analysis, Volume I* by Terry Tao. I strongly recommend that you obtain at least one of these books to read as a companion volume to this course – each book contains much more mathematical exposition than could ever be conveyed in a single term of lectures.

Assessment and Grading:	Problem Sets	30 %
	Class Participation	10 %
	Midterms	30 %
	Exam	30 %

Letter grades will be assigned to percentages in the following manner: 85-100% corresponds to an A, 70-84% corresponds to a B; less than 70% corresponds to a C.

Problem sets will be assigned roughly once per week, to be turned in at the beginning of class on the due date. Late problem sets will not be accepted. Solutions should be written clearly, in complete sentences. You are allowed and in fact encouraged to discuss problems with others, but your solutions must be written up independently. Plagiarism, cheating, falsification and misuse of academic records are

bad things. University policy on these offenses is specified in the Code of Student Rights and Responsibilities available through the ombudsperson, and in the Senate rules (Section 6.3).

Some of our regular class time will be dedicated to student-led discussions. Students should be present and engaged in these discussions; repeated absence or lack of engagement will adversely affect the class participation score. Per university senate rules, students who are absent for more than one fifth of the scheduled classes are expected to withdraw.

There will be two midterm exams in this course: the first to occur on or around October 4, and the second to occur on or around November 3. Precise arrangements will be made later. The final exam is scheduled by the university to occur on December 11, 2017, from 3:30-5:30pm.

Accommodations: If you have a documented disability that requires academic accommodations, please see me as soon as possible. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center for coordination of campus disability services available to students with disabilities.

Updates to this document, along with announcements and problem sets, will be posted on my website, under Teaching.