

MATH 6xx Spring 2015 (x credits)

Course Syllabus

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Lecture Time / Loc	TBA, Kissena Hall 325
Course Homepage	course homepage

Course Overview

Math 6xx is a course in real analysis from the ground up. We will be using

- Set theory and cardinality theory
- Ordered sets and fields
- Construction of the sets of \mathbb{N} , \mathbb{Q} and \mathbb{R}
- Basic Topology
- Sequences and Series
- Continuity
- Limits
- Differentiation

This is not your typical mathematics course. This course will focus on mathematical proofs and *not* computation. This course will teach you how to think.

Course Materials

Textbook: Principles of Mathematical Analysis 3rd edition by Walter Rudin. You can buy this used on the Internet for less than \$10.

Computer Software: You will be required to write your homeworks in L^AT_EX. I recommend using overleaf to write up your homeworks. This has the advantage of (a) not having to install anything on your computer and not having to maintain your L^AT_EX installation (b) allowing easy collaboration with others (c) always having a backup of your work since it's always on the cloud. If you insist to have L^AT_EX running on your computer, you can download it for Windows [here](#) and for MAC [here](#). For editing and producing PDF's, I recommend T_EXworks which can be downloaded [here](#).

Calculator: None needed.

Announcements

Announcements will be made via email. I am known to send a couple emails per week on important issues.

Lectures

I have a no computer / tablet / phone policy during lectures. Only pen / pencil and paper. Classes are 60 minutes twice a week and run from Thursday, January 29 until Thursday, May 14. There will be 28 classes. The format of the classes will not be lectures exclusively. They will be mostly problem solving sessions as we move through the textbook.

Homework

There will be 11–13 homework assignments. Homeworks will be assigned and placed on the course homepage and will usually be due a week later in class. Homework will be **graded** out of 100 with extra credit getting scores possibly > 100 . I will be doing the grading.

Homework must be typeset in L^AT_EX, printed, neat and stapled (**it cannot be emailed to me**). Homework can be given to me in class or delivered to my office in Kissena Hall. *Homework cannot be handed in to my mail slot in the Kiely mathematics office* (unless you want it to be counted as late).

Graded homework will be returned in class. Regrades are handled right after class is over.

You are encouraged to seek help from the instructor if you have questions. **You are recommended to work with each other and help each other.** You must, however, submit your own solutions, *with your own write-up* and in *your own words*. There can be no collaboration on the actual *writing*. Failure to comply will result in severe penalties. The university honor code is something I take seriously and I send people to the Dean every semester for violations.

Philosophy of Homework

Homework is the *most* important part of this course. Success in analysis courses comes from experience in proof methods and it involves working with and thinking about the concepts.

It's kind of like weightlifting; you have to lift weights to build muscles. My job as an instructor is to provide assistance through your zone of proximal development. With me, you can grow more than you can alone. To this effect, homework problems are color coded green for easy, yellow for harder, red for challenging and purple for extra credit. You need to know how to do all the greens by yourself. If you've been to class and took notes, they are a joke. Yellows and reds feel free to work with others. Only do extra credits if you have already finished the assignment.

Time Spent on Homework

This is a x credit course. Thus, the amount of work outside of the 2hr in-class time per week is x-x hours. I will aim for x hr of homework per week on average. However, doing the homework well is your sole responsibility since I will make sure that by doing the homework you will study and understand the concepts in the lectures.

Late Homework

Late homework will be penalized 10 points per day for a maximum of five days. Do not ask for extensions; just hand in the homework late. After five days, it will receive a zero.

Examinations

Examinations are TBA. I may opt for (a) no exams (b) a take-home midterm and final (c) one in-class final.

Cheating on Exams

If I catch you cheating, you can either take a zero on the exam, or you can roll the dice before the University Honor Council which may choose to suspend you.

Grading and Grading Policy

Your course grade will be calculated based on the percentages as follows:

Homework	70%
Examinations	25%

Auditing

Auditors are welcome in both sections. They are encouraged to do all homework assignments. I will even grade them. Note that the university does not allow auditors to take examinations.