

# FOUNDATIONS FOR HIGHER MATHEMATICS 310-310W

*Having fun in a straitjacket*

- Book: Mathematical Reasoning, *Writing and Proof*, Version 2.0. Author: Ted Sundstrom. (See special instructions for Math 310W below.)
- Class: Classes are MWF 1-2 pm in Busch 100 for 310 and the writing part 310W is in Cupples I, 218 4-5 pm on Wednesdays.
- Instructor: Mohan Kumar, Room 111 A, Cupples I. Phone: 5-6728; email: kumar at wustl dot edu and URL:  
<http://www.math.wustl.edu/~kumar/courses/310-2016/310foundations.htm>
- Office Hours: Monday and Thursday 3-4 pm or by appointment.
- Homework: weekly. I will try to post them during the weekend and they are due the Monday a week from then.
- If there is sufficient interest or if I feel that a large number of students have done inadequately in an assignment, I may post the answers to the assignments.
- Exams: There will be one midterm and a final. Midterm will be on 26, October (in class, one hour) and the final is on 21, December 1-3 pm (2 hours).
- Grading: 85-100%-A; 70-84%-B; 50-69%-C; less than 50% will be an F. Homework will count for 40% of the final grade, Midterm will be 25% and the final for 35%.
- This is meant for people in 310W, though others might find it useful and all are welcome to attend. In 310W, all submitted work is expected to be done in the math typesetting system known as  $\text{\TeX}$ . I will give an introduction to this for a couple of weeks. Those of you who use a windows system can download the program free from 'MikTeX'. Apple sometimes loads a version of  $\text{\TeX}$  by default or you can download it free from Apple. You will also need a plain text editor (also known

as an ASCII editor in windows) and MikTeX and the Apple versions comes with such an editor, but you may find other editors to your taste. For example, you can not use MSword or similar programs. While this markup language has a steep learning curve initially, it produces print-ready manuscripts for Mathematics.

- *Plan for 310:* We plan to cover the first seven chapters of the book (may be with some back and forth). In the remaining time we may either do chapters 8-9 or construction of the number systems. I have not yet decided.

Remember that this course is meant to teach you how to read/write proofs, so a lot of emphasis is on being precise and being able to write Mathematics with a view to communication. So, I expect everyone to have gone through the *Preview Activities* prior to class in each chapter, when we are about to begin the chapter. You are also expected to carefully go through *Progress Checks* and make sure that you have assimilated the material before you proceed.

- *Plan for 310W:* As I said before, I expect everyone to have a working T<sub>E</sub>X program installed and bring this to class. On the first Wednesday, I will go over some basics of T<sub>E</sub>X and as an exercise, ask you to type up a document in T<sub>E</sub>X (which I shall decide). All such work must be submitted by email on the Monday after class to me and it should contain two files: one a .tex file and one a .pdf file as attachments. In the next weeks, we will have more complex assignments with at least one revision for each of them.

All the writing assignments will be judged first on your use of English language and writing style. You will also be expected to write Mathematics, how to typeset formulas and how to incorporate references and bibliographies by end of the course.