MATH600 – Fundamentals of Real Analysis – Fall 2018

Catalog description

Rigorous introduction to classical real analysis. Brief review of real numbers. Full discussion of the basic topology of metric spaces, continuity and compactness. Differential analysis of functions of one real variable. Sequences and series of functions

Essential information

- Instructor: Francisco-Javier "Pancho" Sayas
- Lecture times: MW 3:35pm-4:50pm in EWG209
- Office hours: By appointment.
- Website: www.math.udel.edu/~fjsayas/teaching/math600
- Textbook. Walter Rudin, *Principles of Mathematical Analysis*, Third edition. I will essentially follow the structure of the book.
- Problem solving sessions. TBD
- Problem sheets (taken from Rudin and from past preliminary exams) will be assigned regularly.
- Worksheets will also be given from time to time. Worksheets will play the role of self-study or remedial material.

Evaluation

- Short midterm exam (October 10, 1 hour); 15% of the grade
- Long midterm exam (November 7, 2 hours): 25% of the grade
- Final exam (3 hours): 30% of the grade
- Frequent pop-quizzes: 30% of the grade will be taken as the average of all the quizzes, excluding the one with the worst grade

What will be evaluated

- Quizzes will be about knowing definitions, statements of theorems, and simple proofs (or parts thereof)
- The exams will be organized around longer and more demanding problems
- The students are expected to be able to write proofs in a proper clean way. Little credit will be given to collections of formulas spread in the page with no apparent logic or binding text.

How to study

The student has to be ready to study from the classnotes and the textbook. Studying at the graduate level involves careful reading (always with blank paper and a pen by your side), becoming confident in understanding every single detail of a proof or a definition, and being able to reproduce definitions and

simple arguments almost effortlessly. Real analysis is a big classical construction and requires having easy mental access to concepts and arguments keeping in mind that it is impossible to understand what you do not know.

Attendance policy

Attendance to lectures is mandatory.

Academic honesty

As worded by the University of Delaware, All students must be honest and forthright in their academic studies. To falsify the results of one's research, to steal the words or ideas of another, to cheat on an assignment, or to allow or assist another to commit these acts corrupts the educational process. Students are expected to do their own work and neither give nor receive unauthorized assistance. Any violation of this standard must be reported to the Office of Student Conduct. For more details, check (http://www1.udel.edu/stuguide/18-19/code.html#honesty). Cheating of any kind (even if the student does not take any advantage from it) will be grounds for an F grade.