

SYLLABUS FOR MA 511, INTRODUCTION TO ANALYSIS 1, SUMMER 2019

Professor: Maciej Szczesny
Office: MCS 273
Email: szczesny@math.bu.edu
Office Hours: MTWTh 1:30-2:30
Lecture: SHA 206, MTWTh 3-5

Text: Analysis 1 (third Ed.), by Terence Tao. Springer-Verlag.

About this course:

MA511 (Introduction to Analysis 1) is a proof-based course where we carefully study the foundational results of calculus, providing rigorous mathematical justification (proof) for each. This is in contrast to introductory calculus courses where intuitive arguments are used and the focus is primarily on getting comfortable doing calculations. We will look carefully at the properties of the real numbers, and how these are reflected in various properties of real-valued functions. The plan is to cover most of the text, and in particular:

- the natural numbers and basic set theory
- integers, rationals, Cauchy sequences, and the construction of the real numbers
- limits of sequences
- series
- infinite sets
- continuity
- differentiation
- the Riemann integral

Students will be expected to learn how to both read and write mathematical proofs as they learn the subject of real analysis.

Homework: Homework will be assigned every day. You will be asked to hand in a subset of the problems at the end of the week. Late homework will not be accepted. However, your lowest homework grade will be dropped.

Important Dates: The last day to drop the course without a "W" is May 28, and with a "W", June 13. May 28 is also the deadline for tuition reimbursements.

Exams: There will be two in-class exams and a final exam at the end. The dates are as follows:

Exam I Tuesday, June 4
Exam II Tuesday, June 18
Final Exam: Thursday, June 27

Note: No calculators, books, notes, or cellphones are allowed during exams/quizzes.

No make up exams will be given, with the exception of serious illness, in which case you will be required to provide a note from a physician.

Grading Policy:

Homework: 40 %
In-class Exam I: 20 %
In-class Exam II: 20 %
Final: 20 %

The minimum final grades based on the above breakdown are guaranteed to be as follows: **A** 90-100 %, **B** 80-89, **C** 70-79, **D** 60-69.

Academic Honest: You are encouraged to discuss homework problems with other students. However, your write-ups should ALWAYS be your own. If you are caught plagiarizing, you will be referred to the University Academic Standards Committee for disciplinary action.

Standards of Civilized Behavior: Lecture is a time devoted to learning. Activities which interfere with this process will not be tolerated. For this reason, laptops are not allowed in class. Please turn off your cell-phone before coming to class.