Math 131: Introduction to Topology

Fall 2016

Content: This course will have two parts, roughly corresponding to the two parts of our text. In the first, we'll introduce the fundamental definitions of topological spaces and continuous maps, and study related notions such as compactness, connectedness and separation axioms. In the second, we'll begin the study of topological spaces via their algebraic invariants, such as the fundamental group.

Prerequisites: Basically, some familiarity with abstract, proof-based mathematics. Math 122 would be nice, especially since the notion of a group will appear in the second half of this course, but is not strictly speaking necessary. If you're unsure of your background, glance over sections 1-7 of Chapter 1 of Munkres; you don't need to know everything in those sections but the language and ideas should not be foreign to you.

Text: The only required text will be *Topology* by Munkres. We'll be covering (roughly) Chapters 2, 3 and 4 from Part I, and Chapters 9, 10, 11 and 13 from Part II.

Course Assistants: We have two CAs: **Ashvin Swaminathan** (`aaswaminathan@college.harvard.edu`) and **Carlos Albors-Riera** (`carlosalborsriera@college.harvard.edu`) who will hold weekly sections (see below) and office hours, and grade homework (ditto).

Sections: We will set up two weekly sections to go over material from lecture and homework (one will probably be during Math Night in the Leverett DH; `http://math.harvard.edu/undergrad/mathnight.html`). These are highly recommended, for several reasons: even if you don't need help with specific problems on the current PSet, it's a chance to ask general questions about course material (or related issues that may not be dealt with in the lectures); it's also a chance to get to know the CAs and your fellow students and learn their perspectives.

Homework: There will be weekly homework assignments posted on this webpage. Doing these is essential if you hope to get something out of the course, and on behalf of Ashvin and Carlos let me implore you not to get in the habit of turning in homework late.

The homework assignments will be due Wednesday each week; hopefully we can get them posted a week before the due date.

Exams: We will have one in-class midterm exam at the end of the first unit of the course, and a take-home final, due at the end of reading period.

Grading: Course grades will be based on your homework (60%), the midterm (15%) and the final exam (25%).

Academic Integrity: The course policy on collaboration is simple: you should by all means talk about and work together on assignments—this is encouraged, in fact—but you should write up the assignments on your own.