

Math 231a Topology Syllabus
Harvard University Math Department, Fall 2013

Instructor: Hiro Lee Tanaka

Location: Science Center 411
E-mail: hirohirohiro@gmail.com
Class Meeting Time: M., W., F., at 2
Office: Science Center 341 (in the back of the library)
Office Hours: Wednesdays, 1 PM - 2 PM and Thursdays, 2 PM - 3 PM.

Philosophy of the class

I'm expecting a range of students in this class—those who love topology, those who are simply curious, and those who may feel indentured. My goal is for you to leave this class feeling like you understand what algebraic topology is about—why people find passion in it, why people find a tool in it, and what it means to “think topologically”, or, as it is often the case, “think homotopically”.

Logistics: The role of lectures and exercises

We will have 38 lectures in this class. The week preceding (and the week of) Thanksgiving Break I will not be here. Those days will be spent with student presentations on certain topics with a faculty member overseeing the presentations. I have outlined below topics more than enough for 38 lectures, but I will aim to cover it all with the expectation that you will learn much of the material by exploring ideas on your own as well. This means I will assign many exercises and examples so you get plenty of feel for the topics; as long as you actively engage with them.

Homework and exercises

I aim to give you many homework exercises every week. It is crucial that you attempt these exercises to really develop what it feels like to play around with these things. For instance, you will not get used to long exact sequences and spectral sequences (fundamental tools of computation) without digging in. You must hand in homework every Friday at the beginning of class, to me. If you want an extension on a homework assignment, you must get approval from me (Hiro Lee Tanaka).

Examinations

All examinations (midterms, if there are any, and the final, which will happen) will be take-home examinations. The problems will be given to you electronically or on a sheet of paper, and you will have a set amount of days to complete them.

Collaboration

I strongly encourage all of you to collaborate. Please do so with exercises and homeworks and talk preparations. However, indicate clearly on every assignment that you have collaborated, and indicate with whom. (Professors or students or friends or parents, or whoever helped you in finding solutions.) Finally, write solutions on your own. It is fine to think through problems and find solutions with each other, but when it comes to the act of writing it all up, you must do so without assistance from another. As an extreme anti-example, copying and pasting solutions/proofs will not be tolerated.

Office Hours

These are times I will be in my office. I set them aside to have time to interact with you—to help, to expand, to deepen your experience in the class. My door will often be closed because I am by the library (I don't want to be noisy) but knock, and if I am in, I will answer.