Mathematics 527 — Homotopy Theory
Spring 2023
(1–2 MWF, in 347 Altgeld)

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Course description:
This is a course on topics in algebraic topology and homotopy theory, organized as literature seminar in the style of the famous "Kan seminar". The goals are:

- To give students who have had some grounding in the foundations of the subject (as in Math 525 and/or 526) exposure to original literature.

- To give students experience in the process of quickly reading and assimilating research papers.

- To give students experience in giving mathematical talks.

Although the topics of the course are drawn from algebraic topology and allied fields, it may be useful to people interested in other areas.

Course organization:
The course will be organized as follows.

- Each student will give talks on three papers, chosen by me and the student in consultation. They may be chosen to align with the students particular interests. I'll provide a list of papers as suggestions, but papers outside of my list are possible as well.

- Students are expect to attend all talks. Only students in the class are allowed as audience members for talks (no auditors).

- Everyone not speaking is expected to have skimmed the paper before the talk on it, and to submit a "reading response". This is meant to be a short note where you can express your ideas on what the paper is about, describe how it fits with other things you may know, what may have seemed surprising about the paper, and to ask any questions you might have.

- It is typical (and highly recommended) for students to organize informal practice talks to other members of the class, before giving the final version of their talk in class.

Prerequisites: Math 525 and/or 526, or instructor consent.