

Math 592: Algebraic Topology

Winter 2023

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This course covers the basics of algebraic topology, including fundamental groups, covering spaces, and homology, as well as some of their applications.

Time and place. Monday, Wednesday, Friday 10–11am in 1084 East Hall.

Course webpage. <http://www-personal.umich.edu/~arper/math592w23/>

Office hours. TBD

Textbook. The main textbook for the class is *Algebraic Topology* by Allen Hatcher. There are also many other sources for our course material — for example *A Concise Course in Algebraic Topology* by J. P. May — which you are encouraged to explore.

Prerequisites. I will assume knowledge of point set topology (at the level of Math 591) and abstract algebra (at the level of Math 593/594). The language of category theory will also be useful, but will be reviewed or relegated to exercises as needed.

Homework. There will be weekly problem sets posted on the course webpage. Homework is due at 8pm on Fridays and should be submitted through Canvas.

You are encouraged to collaborate on problem sets with your classmates, but you should write up your solutions independently and include a written acknowledgement of your collaborators.

Late homework will not be accepted, but your two lowest homework scores will be dropped in the computation of your grade.

Exams. There will be a 50-minute in-class midterm exam on Friday, February 24, and a 2-hour final exam on Wednesday, April 26 at 10:30am. Both exams will be in 1084 East Hall.

Grading. Grades will be based on homework (35%), the midterm exam (25%), and the final exam (40%).