

MATH 526 Algebraic Topology II

Fall 2023

Instructor:

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Contact

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Course description: This is the second semester of the algebraic topology sequence, and for the most part will concentrate on studying singular cohomology, its structure and applications. The first part of the course will concentrate on the cup product in cohomology, Poincaré duality, and various applications. Then we will study vector bundles, characteristic classes, and cohomology operations, and if time permits, we'll cover some basics related to complex K -theory.

Prerequisites: MATH 525 or consent of instructor.

Textbooks: The main textbooks will be

- *Algebraic Topology*, by Hatcher. (Free pdf version is available at <http://www.math.cornell.edu/~hatcher/AT/ATpage.html>)
- *Geometry and Topology*, by Bredon. (Free pdf version is available through the library.)
- *Characteristic Classes*, by Milnor and Stasheff. (A free pdf version is available through the library.)

Other helpful references include:

- *Algebraic Topology*, by Switzer,
- *A Concise Course in Algebraic Topology*, by May.

Assignments: There will be homework every 2-3 weeks, and a final project.