

**MATH 7221: TOPOLOGY 2**  
**FALL 2020**

BEN KNUDSEN

**Course content.** This class covers foundational algebraic topology. Here are some possible topics.

- Homology theory and computations
- Basic homological algebra
- Cell complexes
- Cohomology and the cup product
- Applications (e.g., to fixed point theory)
- Poincaré duality

**Course material.**

- The primary references are Hatcher's *Algebraic Topology* (<https://pi.math.cornell.edu/~hatcher/AT/AT.pdf>) and Bredon's *Topology and Geometry*.
- Lectures may draw freely from other references.
- Other materials may be posted to the course website.

**Coursework and grading.**

- Grades will be based on homework (60%) and a final exam (40%).
- No late homework without prior permission.
- Collaboration is encouraged on homework (please credit collaborators) and forbidden on exams.
- Homework is to be typeset in Latex and submitted by email.

**Other information.**

- Class: W 1:30–4:30, Zoom meeting ID 965 6760 5899, password “topology”
- Office hours: T 10:30–11:30 (for now), Zoom meeting ID 946 5402 5449, password “topology”
- Website: [knudsen.sites.northeastern.edu/teaching](https://knudsen.sites.northeastern.edu/teaching)
- My email: [b.knudsen@northeastern.edu](mailto:b.knudsen@northeastern.edu)
- My pronouns: he, him, his
- Title IX: as a faculty member, I'm a *responsible employee*, which means that I'm required to report all allegations of sex or gender-based discrimination to the Title IX Coordinator.