

# MA 532 ALGEBRAIC TOPOLOGY

Fall 2024

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<b>Instructor:</b> Sarah Percival	<b>Time:</b> MWF 10:00 – 10:50
<b>Email:</b> spercival@unm.edu	<b>Place:</b> SMLC 352

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## Course Page:

1. <https://www.math.unm.edu/~sarah/teaching.html>

**Office Hours:** Tu/Th 10am in SMLC 220, or by appointment.

## Main References:

- *Algebraic Topology* by Allen Hatcher. The textbook is available online for free here
- *Computational Topology for Data Analysis* by Tamal Dey and Yusu Wang. This textbook is also available online for free here.

## Supplementary References:

- *Topology* and *Elements of Algebraic Topology* by James R Munkres.
- Will be updated throughout the course

**Grading Policy:** Grades will be determined solely by weekly homework. There will be no exams. Attendance is not required, but strongly encouraged. The grading scale is:

$$\begin{aligned} A &\geq 80\% \\ 75\% &\leq A- < 80\% \\ 70\% &\leq B+ < 75\% \\ 65\% &\leq B < 70\% \end{aligned}$$

These numbers may be adjusted downward, but will not be adjusted upward. Students who attend class, put effort into their homework, and attend office hours when needed will get at least a B-.

**Responsible Learning and Academic Honesty:** You are allowed to collaborate with other students in the course, but you must submit your own original work. It is permitted to use outside resources (other textbooks, Stack Exchange, ChatGPT, etc) to aid in your understanding of the course material. If you use a resource (such as an AI, classmate, or a website) to aid you with work submitted for this class, document how you used it. However, you **may not** post homework questions on any online forum or enter them into generative AI software.

Cheating and plagiarism (academic dishonesty) are often driven by lack of time, desperation, or lack of knowledge about how to identify a source. Communicate with me and ask for help, even at the last minute, rather than risking your academic career by committing academic dishonesty. Academic dishonesty involves presenting material as your own that has been generated on a website, in a publication, by an artificial intelligence algorithm (AI), by another person, or by otherwise breaking the rules of an assignment or exam. It is a Student Code of Conduct violation that can lead to a disciplinary procedure.

**Credit-hour statement:** This is a three credit-hour course. Class meets for three 50-minute sessions of direct instruction for fifteen weeks during the Fall 2024 semester. Please plan for a minimum of six hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week.

**Accommodations:** UNM is committed to providing equitable access to learning opportunities for students with documented disabilities. As your instructor, it is my objective to facilitate an inclusive classroom

setting, in which students have full access and opportunity to participate. To engage in a confidential conversation about the process for requesting reasonable accommodations for this class and/or program, please contact Accessibility Resource Center (<https://arc.unm.edu/>) at [arcsrvs@unm.edu](mailto:arcsrvs@unm.edu) or by phone at 505-277-3506.

**Title IX:** The University of New Mexico and its faculty are committed to supporting our students and providing an environment that is free of bias, discrimination, and harassment. The University's programs and activities, including the classroom, should always provide a space of mutual respect, kindness, and support without fear of harassment, violence, or discrimination. Discrimination on the basis of sex includes discrimination on the basis of assigned sex at birth, sex characteristics, pregnancy and pregnancy related conditions, sexual orientation and gender identity. If you have encountered any form of discrimination on the basis of sex, including sexual harassment, sexual assault, stalking, domestic or dating violence, we encourage you to report this to the University. You can access the confidential resources available on campus at the LoboRESPECT Advocacy Center (<https://loborespect.unm.edu>), the Women's Resource Center (<https://women.unm.edu>), and the LGBTQ Resource Center (<https://lgbtqrc.unm.edu>). If you speak with an instructor (including a TA or a GA) regarding an incident connected to discrimination on the basis of sex, they must notify UNM's Title IX Coordinator that you shared an experience relating to Title IX, even if you ask the instructor not to disclose it. The Title IX Coordinator is available to assist you in understanding your options and in connecting you with all possible resources on and off campus. For more information on the campus policy regarding sexual misconduct and reporting, please see <https://policy.unm.edu/university-policies/2000/2740.html> and CEEO's website.

If you are pregnant or experiencing a pregnancy-related condition, you may contact UNM's Office of Compliance, Ethics, and Equal Opportunity at [ceo@unm.edu](mailto:ceo@unm.edu). The CEEO staff will provide you with access to available resources and supportive measures and assist you in understanding your rights.

**Citizenship and/or Immigration Status:** All students are welcome in this class regardless of citizenship, residency, or immigration status. Your professor will respect your privacy if you choose to disclose your status. UNM as an institution has made a core commitment to the success of all our students, including members of our undocumented community. The Administration's welcome is found on our website: <http://undocumented.unm.edu/>

**Respectful Conduct Expectations:** I am committed to building with you a positive classroom environment in which everyone can learn. I reserve the right to intervene and enforce standards of respectful behavior when classroom conduct is inconsistent with University expectations. Interventions and enforcement may include but are not limited to required meetings to discuss classroom expectations, written notification of expectations, and/or removal from a class meeting. The University of New Mexico ensures freedom of academic inquiry, free expression and open debate, and a respectful campus through adherence to the following policies: D75: Classroom Conduct, Student Code of Conduct, University Policy 2240 – Respectful Campus, University Policy 2210 – Campus Violence.

**Land Acknowledgement:** Founded in 1889, the University of New Mexico sits on the traditional homelands of the Pueblo of Sandia. The original peoples of New Mexico Pueblo, Navajo, and Apache since time immemorial, have deep connections to the land and have made significant contributions to the broader community statewide. We honor the land itself and those who remain stewards of this land throughout the generations and also acknowledge our committed relationship to Indigenous peoples. We gratefully recognize our history.