

MATH 426: INTRODUCTION TO TOPOLOGY

Fall 2026

Instructor:	Kasia Jankiewicz (she/her)	Time:	MWF 2:00 - 2:50
Email:	through Canvas	Place:	MATH 105
Office:	MATH 215	Canvas page:	link
Office hours:	by appointment		

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1 Land acknowledgement

UBC's Point Grey Campus is located on the ancestral and unceded territory of the x^wməθk^wəyəm (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on their culture, history, and traditions from one generation to the next on this site. Learn more about Musqueam [here](#).

2 Prerequisites

A score of 68% or higher in both MATH 321 (Real Variables II) and MATH 322 (Introduction to Group Theory).

3 Course description

This course has two main parts. The first one will cover basics of the point set topology: topological and metric spaces, continuous maps, induced topologies, connectivity, compactness, Urysohn's Lemma. In the second part we will introduce the basic homotopy theory, the fundamental group, and covering spaces. If there is time left, we will discuss additional topics.

4 References

- *Topology* by James Munkres, 2nd edition (can be found online) - we will roughly cover the topics covered by this book, but in less detail.
- *Algebraic Topology* by Allen Hatcher (freely available online) - Chapter 1 corresponds to the second part of the course.
- *Topology and Geometry* by Glen Bredon (pdf available through the UBC library) - Chapter 1 and 3 correspond to the first and second part of this course.

5 Canvas

All the course information and assignment will be posted on Canvas. Please check it for announcements.

6 Piazza

All questions about the mathematical content of the course or the course logistics should be posted on Piazza for everyone's benefit. You are welcome to answer questions of your peers.

7 Homework

Homework problem sets will be assigned weekly on Monday, and due on the following Sunday at 11:59pm. The homework submission is through Canvas.

You are encouraged to work together on problem sets. However, your solutions must be written up independently. The use of generative AI is permitted, but needs to be acknowledged in your written solution of each problem where you used it. The homework grading will be at the grader's discretion. Typesetting your solutions in $\text{\LaTeX}$ is strongly encouraged.

The late homework is accepted with a 10% penalty per each 24 hour period that it is late, for up to 5 days. To accommodate for unforeseeable circumstances, two lowest problem set scores will be automatically dropped at the end of the term.

8 Presentations

The last two classes of the term (Friday December 4 and Monday December 7) will be devoted to students presentation. Your presentation should be 8-10 minutes long. You need to propose a topic of your presentation to the instructor by Friday, November 27.

9 Exams

There will be three exams:

- Wednesday, October 14
- Monday, November 16
- during the finals week - date TBA

Each exam will be of similar length and cover part of the material. Exams are worth 60% total. If your lower midterm score falls below your final exam score, it is dropped and the remaining midterm and final are worth 30% each; otherwise all three count equally. There will be no make-up exams. All exams will be closed-book.

10 Grade breakdown

Homework: 25%

Final presentation: 15%

Exams: 60%

11 Course Topics

Subject to change. The exact topics covered each week will be posted in Canvas.

1. Metric spaces, topological spaces, continuous maps
2. Induced topologies
3. Separation axioms
4. Connectedness
5. Compactness
6. Homotopy
7. Fundamental group
8. Van Kampen's theorem
9. Covering spaces
10. Deck transformations

12 Accessibility

Students requiring support due to physical or learning disabilities may apply for accommodations through the [Centre for Accessibility](#) (CfA). Students must [register with the CfA](#) before requesting accommodation.

13 UBC resources to support student success

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values

academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available [here](#).

14 UBC statement on respectful environment

The University expects courses to be respectful environments. This expectation extends to discussion forums associated with the course, where posts must be respectful and civil. The University's [Statement on Respectful Environment](#) highlights two central principles, *freedom of expression* and *promotion of free inquiry*, and an underlying requirement of *a vigorous commitment to recognition of and respect for the freedoms of others, and concern for the well-being of every member of the university community*.