Syllabus: UBC-V Math 200, 2025 WT2

All sections (201, 202, 20M)

Jan-April, 2026

Description

- The main aim of Mathematics 220 is to teach you how to think mathematically, prove or disprove mathematical statements, and write clear, coherent, "good" proofs. This means that, to many of you, this will be quite a different course from the other math courses you have taken. In this course, we will mainly focus on the question "why is X?" instead of "what is X?". This means that we are going to more focus on justifying results rather than calculating expressions.

- From the calendar:
  Sets and functions; induction; cardinality; properties of the real numbers; sequences, series, and limits. Logic, structure, style, and clarity of proofs emphasized throughout. [3-0-0] Prerequisite: Either (a) a score of 64% or higher in one of MATH 101, MATH 103, MATH 105, SCIE 001 or (b) one of MATH 121, MATH 200, MATH 217, MATH 226, MATH 253, MATH 254.

Sections and Instructors

All instructors can be contacted using Canvas inbox. Note that instructors may not check their mail outside of business hours, and may not respond immediately.

- Section 201, TR 9:30AM-11:00AM. Instructor: Maksym Zubkov
- Section 202, TR 12:30PM-2:00PM. Instructor: Sven Bachmann
- Section 20M, MWF 3:00PM-4:00PM. Instructor: Elyse Yeager

Course structure

- In this course we are going to have a common Canvas site, named "MATH_V 220 ALL SECTIONS 2025W2". All homework sets, announcements, mini

quizzes, pre-lecture videos, etc. will be posted on the common Canvas site. There are also pages for individual sections where your instructor may post section-specific material, like their lecture notes.

- The Canvas site is organized in weekly modules. Modules have pre-recorded short introduction videos followed by mini quizzes to make sure that you are on track with the materials.
- You are expected to watch the pre-recorded videos (and finish the accompanying quizzes) before coming to your lectures. Lecture hours can then focus more on explaining nuances, doing examples, and group work.
- Learning activities include watching videos; completing mini-quizzes; attending lectures; participating during class; and completing homework questions. You may also read textbook and student perspective papers (provided on Canvas) and engage on Piazza.

Topics

- The course will cover (approximately)
  - Sets,
  - Basic logic,
  - Direct and contrapositive proofs,
  - Quantifiers,
  - Induction,
  - More sets,
  - Equivalence relations,
  - Functions,
  - Proof by contradiction,
  - Cardinality and infinite sets.
- Throughout the term we will emphasise both technical correctness and clarity of presentation.

Attendance in case of sickness

- If you feel ill, you should not attend class in person. Stay home and use the self-assessment tool at https://bc.thrive.health/ for guidance. Ask your classmates for notes on missed material.

- If you do not feel ill, you are expected to attend class in person. Math is challenging, and active, in-person participation is important to your academic success.
- As for what happens if your instructor feels ill, please check your section's Canvas page for announcements.

Textbook

- The course will follow PLP - An introduction to mathematical proof by Demirbas and Rechnitzer, with exercises contributed by Kohut and Trainor.
- It is a free online text (which you can also download as PDF if you want).
- It was developed at UBC for this course and was partially funded by UBC's OER fund.
- The text also has links to a set of short video lectures, slides and worksheets.
- We also recommend the Book of Proof by Richard Hammack - it is also free to download.

Assessments

Breakdown of marks

- 5% Mini quizzes (two a week, on the common Canvas site),
- 15% Homework,
- 30% Midterm exams (two midterms, 15% each),
- 50% Final exam.

Mini quizzes

- There will be short Canvas quizzes each week - starting from the very first week! The quizzes are to help you keep up to date with material and come to class prepared. Before you attempt the quizzes, you should watch some videos on the material - we'll tell you which ones. You can find all the videos in a big list here. The slides from the videos are also there.

Homework

- There will be one assignment posted weekly (unless otherwise specified). Each assignment is due in the following week on Friday, to be submitted on Canvas.
- Please remember that copying solutions from another student, from the web or from any other source, and turning them in as your own, is a violation of the Academic Code.
- You are not allowed to use LLMs (like ChatGPT) for coursework. If you're having a hard time coming up with ideas to solve a problem, you may discuss on Piazza, with classmates, and with instructors at office hours.

Midterm Exams

The midterm exams will be in-class, in-person, and during class time. They will be held on Feb 11/12 and March 26/27, 2026.

Final Exam

The date, time and location of the final exam will be announced close to the middle of the term. There will be no alternate final exam date.

Concessions for missed assessments

- If a student misses a midterm for a valid reason (illness, etc.), their instructor should be notified within 48 hours, and any requested documentation provided within 7 days of the request. If a concession is granted, the weight of one midterm will be shifted to the final exam. Failure to comply may result in a mark of 0 for the midterm.
- There will be no make-up midterms. The weight of one excused midterm will be transferred to the final examination. If a student misses both midterms, they must contact their academic advising office for concessions.
- Quizzes should be finished before class, but are accepted without penalty until their Friday due dates on Canvas. Your lowest two quiz scores will be dropped at the end of the semester, and the weight shifted to the other quizzes. This is not intended as a grade giveaway, but as a paperwork-reduction mechanism to handle late registration, illness, sports conflicts, religious observances, and other reasons you might legitimately have to miss coursework.
- Late homeworks will be accepted until Sunday with a 10%-per-day penalty, after which there will be no extension or remake. BUT, we will be dropping

your lowest two homework grades at the end of the semester to compensate for those times that you weren't able to finish the homework. Note this is not intended as a grade giveaway. It is intended to replace the onerous task of documenting illness, late registration, etc. Weight is shifted to the other homework assignemnts. The deduction for late work is calculated very punctually by Canvas, so make sure you submit your work well in advance of the deadline to account for technical difficulties.

Missed final exam

- You will need to present your situation to your faculty's Advising Office to be considered for a deferred exam.
- See the Calendar for detailed regulations.
- Your performance in a course up to the exam is taken into consideration in granting a deferred exam status (for instance, if you do not participate in the course material up to the final, you may not be granted a deferred exam).

University Policies

- 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 on https://senate.ubc.ca/policies-resources-support-student-success.
- UBC Math general syllabus information can be found here: https://www.math.ubc.ca/general-syllabus-information