

# Math 220 Syllabus 2024 W1

## Common Syllabus

- 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.

## Structure of the course

- In this course we are going to have a common Canvas site, named “MATH\_V 220 ALL SECTIONS 2024W1 Mathematical Proof”. All the homework sets, announcements, mini quizzes, pre-lecture videos, etc. are going to be posted on the common Canvas site. There will also be pages for the individual sections where your instructor may post section specific material like their lecture notes.
- The Canvas site is going to be organized in weekly modules. In each module, there are going to be two pre-recorded short introduction videos which are going to be followed by mini (quite easy, very short) quizzes to make sure that you are on track with the materials. At the end of the modules, there will be the information about the weekly homework sets (see below).
- The lectures are going to be at your scheduled times and location. The lecture hours are going to focus more on explaining nuances, doing examples, and group work instead of going over the definitions given in the pre-recorded videos. This means that you are required to watch the pre-recorded videos (and finishing the quizzes) before coming to your lectures.

## Sections and Instructors

- Section 101, TTh 9:30AM-11:00AM,  
Instructor: Joshua Zahl,
- Section 102, MW 12:30PM-2:00PM,  
Instructor: Nahid Walji,
- Section 103, TTh 12:30PM-2:00PM,  
Instructor: Joshua Zahl,
- Section 10M, MWF 3:00PM-4:00PM,  
Instructor: Seekin Demirbas.

# Math 220 Syllabus 2024 W1

## 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.
- If you are feeling ill on the day of the midterm or the final you should not attend the exams. For missed exams, please read the page 4 and 5.
- 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. But, if you are not going to be able to make it to class, please check your section's Canvas page for your instructor's accommodations.
- As for what happens if your instructor feels ill, please check your section's Canvas page for details.

## 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.

## Topics

- The course will cover (approximately)
  - Sets,
  - Basic logic,
  - Direct and contrapositive proofs,
  - Quantifiers,
  - Induction,
  - More sets,
  - Equivalence relations,
  - Functions,

# Math 220 Syllabus 2024 W1

- Proof by contradiction,
- Cardinality and infinite sets.
- Throughout the term we will emphasise both the mathematical correctness, and also the importance of clarity of presentation of mathematics.

## Assessments

### Breakdown of marks

- 5% Mini quizzes (two a week, on the common Canvas site),
- 20% Homework,
- 30% Midterm exam,
- 45% Final exam,

You will need to get at least 40% on the final exam to pass the course.

### Mini quizzes

- There will be two very 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.
- Late quizzes will be accepted with 20% penalty until Sunday, after which there will be no extension or remake. BUT, your lowest two quiz scores will be dropped at the end of the semester.

### Homeworks

- 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.
- Late homeworks will be accepted until Sunday with a 20% penalty after which there will be no extension or remake. BUT, we will be dropping your lowest homework grade at the end of the semester to compensate for those times that you weren't able to finish the homework. However, if you are going to be missing several homework assignments, please get in touch with your section's instructor to let them know about your situation.

# Math 220 Syllabus 2024 W1

- We would like you to work together on the homework sets since it is good to collaborate and learn from one another. But, you cannot write the solutions together. And 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 allowed to use LLMs like ChatGPT for help when you are working on your homeworks. BUT, note that LLMs are just a tool to be used sparingly and carefully since they are not always factually accurate. Moreover, remember that you are not going to be allowed to use such tools during the exams.

## Midterm Exam

- The midterm exam will be in-class, in-person, and during class time.
- It will be 45 minutes and closed-book.
- It will be held on October 23-24 for Wednesday and Thursday lectures in your class time.

## Final Exam

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

## Missed homework or midterm

- If a student misses the midterm, that student shall provide a documented excuse otherwise a mark of zero will be entered for that midterm.
- Examples of valid excuses to miss an exam are an illness which has been documented by a physician and/or Student Health Services, late arrival due to visa (or study permit) or travel restrictions problems, or an absence to play a varsity sport (your coach will provide you with a letter).
- Your instructor should be notified within 48 hours of such an absence and appropriate documentation should be produced within 7 days. Failure to comply with these time limits will result in a mark of zero.
- There will be no make-up midterms or homework if you miss an assignment or the midterm; the weight of the missed midterm will be transferred to the final examination.

# Math 220 Syllabus 2024 W1

## 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>.
- Weather Contingency Plan for Class Sessions and Exams: You should check [ubc.ca](http://ubc.ca) often during bad weather or snow. If a class session is cancelled, please check Canvas for information. If a cancellation impacts a midterm exam, we will reschedule to another class time. If the final exam is impacted, it will be rescheduled by student services. If you are registered to write exams at the Centre for Accessibility, I encourage you to contact your CFA advisor to discuss the weather contingency plan for this course.