

Instructors:

Section 101: Yaniv Plan, yaniv@math.ubc.ca

Lectures: MWF 1:00 - 2:00 pm, through zoom, accessed through Canvas website

Office hours (tentative): W 2:00 - 3:00 pm, Th 3:00 - 4:00 pm

Section 103: Jonathan Hermon, jhermon@math.ubc.ca

Lectures: TTH 9:30 - 11 am, through zoom, accessed through Canvas website

Office hours (tentative): T 5:00 - 6:00 pm, Th 11:00 am - 12:00 pm

Course website: On Canvas.

Prerequisites: One of MATH 200, MATH 217, MATH 226, MATH 253, MATH 263.

Text: We follow the book “Introduction to Probability” by Anderson, Seppäläinen, and Valkó. Other references of interest are R.L. Scheaffer, “Introduction to Probability and its Applications”, and S.M. Ross, “A First Course in Probability”.

Outline: The course will include the following topics:

1. sample spaces, events, axioms of probability
2. counting principles, permutations and combinations
3. independence and conditional probability, Bayes formula
4. discrete random variables, expectation and variance
5. continuous random variables, expectation and variance
6. joint distribution and conditional distribution
7. transformation of random variables
8. covariance and correlation
9. moment generating function
10. Chebycheff inequality
11. law of large numbers and central limit theorem

Evaluation: There will be semi-weekly questions, weekly written homeworks, and quizzes every two weeks.

Semiweekly questions: Section 103 will have a question posted after each lecture, due by the following lecture. Section 101 will have a question posted after Monday and Wednesday lectures, due the following lecture. These will be based on the lecture just observed. They will be in webwork format, with unlimited attempts allowed.

Written homeworks: These will be due each Friday by 11:59pm after the first week of class. Solutions should be submitted as a single file through canvas. You may write answers by hand and scan or take pictures of your work, or you may type up solutions. Late homework will not be accepted. The lowest homework score will be dropped.

Quizzes: There will be quizzes every two weeks, starting on the third week. These will be in webwork with a 45-minute time limit and one attempt per question. Students may complete quizzes any time in a 24 hour window. Quiz questions will be different for different students. They will be open book so you are allowed to browse books, notes, webpages. For further clarification, see Academic Integrity, below. You will need a calculator. The quizzes will be mainly on the material covered in the previous two homeworks, but may also contain earlier material. Quizzes may not be completed late. The lowest quiz score will be dropped.

There will be no midterm or final exam, but there will be one last quiz, with the same weight as all other quizzes, on the final exam day.

Grading scheme:

Semiweekly questions: 10%

Homework: 25%

Quizzes: 65%

Academic integrity:

Homework: Students may work together to understand the problems, but are expected to write their solutions independently. No two homeworks should look identical. Students may research concepts online, but may not use solutions which are found online.

Quizzes: These will be open-book. However, students are prohibited from interacting with other students or any other people in order to determine the answers. Questions should absolutely not be posted online or shared anywhere.

Statement on UBC's Policies and 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 and cultural 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: <https://senate.ubc.ca/policies-resources-support-student-success>.