MATH 302 Introduction to Probability

Instructor: Yaniv Plan

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 weekly written homeworks, a midterm exam and a final exam.

Written homeworks: These will be due each Friday by 10:00 pm after the first week of class, graded for completion. 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.

Grading scheme:
Written homework: 15%
Midterm: 35%
Final: 50%

If you receive a higher score on the final than the midterm, your midterm score will be replaced by your final exam score.

Missed Assessments

- If you miss a midterm for valid reasons, the weight of the midterm will be passed onto the final. In this case, you must fill in this form and email it to the instructor within 24 hours of the missed asessment.
- The lowest homework score will be dropped. This allows one missed homework without penalty.
- For final exams, academic concessions are handled through your Faculty Advising Office. UBC's policies on concessions can be found here.

Please see the course Canvas page for details closer to the date of the exams/assignments.

General Syllabus Information

The Mathematics Department has standard syllabus information. This includes standardised policies for

- academic concessions (i.e., missed assignment, quiz, midterm)
- academic integrity (i.e., cheating)
- registration issues (your instructors have no control over anything to do with registration)
- misc student resources

You can find that information here: https://www.math.ubc.ca/general-syllabus-information

Student Resources

Science Advising	Health and Wellbeing	Centre for Accessibility
Academic Concession (Final Exam)	Academic Integrity	Counselling Services

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`.