MATH 302   **Introduction to Probability**   **Summer Term 1, 2020**

Instructor:
Yaniv Plan, `yaniv@math.ubc.ca`

Lectures:
Zoom room: `https://ubc.zoom.us/j/7728414965?pwd=QnhYa2hhMjY5NFZNbjFCMFFqS1JXZz09`

Office hours:
Monday 17:00-18:00, Wednesday 16:00-17:00, in the same zoom room as lectures

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 daily questions (one question per lecture), weekly homework assignments, weekly quizzes, a midterm, and a final exam. The lowest homework score and lowest quiz score will be dropped.

Midterm exam: There will be a 50-minute midterm exam in class on **Wednesday, June 3**.

Final exam: There will be a final examination during the examination period.

Final mark: The final mark will be calculated as follows:
  Daily questions: 10%
  Homework: 20%
  Quizzes: 30%
  Midterm: 15%
  Final exam: 25%