

**Instructor:** Éric Fusy

**Instructor in charge:** Omer Angel

**Contact:** fusy@math.ubc.ca

**Lectures:** Mon Wed Fri 11:00-12:00, LSK 201

**Course webpage:** <https://www.math.ubc.ca/~fusy/math302>

**Office hours:** Mon Fri 13:30-15:00 in LSK 300B, or by appointment

Mon 3:00 - 4:30 pm

**Course outline:**

The course will be based on topics from the 10 first chapters of “Introduction to probability”, by Grinstead and Snell.

Available at the bookstore, can be downloaded at <https://math.dartmouth.edu/~prob/prob/prob.pdf>

Topics:

1. Sample spaces, events, axioms of probability
2. Some elementary combinatorics. Combinations and permutations
3. Conditional probabilities, independence and Bayes Formula
4. Discrete random variables, expectation and variance
5. Continuous probability densities, continuous random variables, expectation and variance
6. Joint distributions, marginal distributions and conditional distributions
7. Sums of random variables, generating functions for random variables
8. Limit Theorems: weak law of large numbers, central limit theorem

An updated file describing what has been covered (with pointers to the textbook) will be maintained on the webpage of the course.

**Evaluation:** The final mark will be based on homework (15%), mid-term (35%) and the final exam (50%).

**Homework:** Weekly assignments will be given. These are due at the **beginning** of class on the due date, normally each Wednesday (except a monday due date the week of midterm). No later assignments be accepted. The single lowest assignment will be ignored. Due dates for assignments: Jan. 20, 27, Feb. 3, 10, 22 Mar. 2, 9, 16, 23, 30.

**Holidays:** Monday February 8th, Friday March 25.

**Mid-term:** The mid-term will take place during class on **Wednesday, February 24**.

**Final examination** will take place in the April examination period. Please do make travel plans before the exam schedule is announced.

**Missed mid-terms and assignments** will normally receive a zero grade. Exceptions may be granted by *prior consent* from me, or for a documented *medical emergency*. In the latter case, I must be notified as soon as possible (preferably before the test), and presented with a doctor’s note immediately upon the student’s return to UBC. When an exception is granted for a missed test, there is no make-up test, and the final exam mark will be used.