

INSTRUCTOR: Tim Hulshof

CONTACT: thulshof@math.ubc.ca

COURSE WEBPAGE: www.math.ubc.ca/~thulshof/teaching

LECTURES: M-W-F 14:00–15:00, Math annex 1100

OFFICE HOURS: M 11:00–12:00, F 16:00–17:00 (or by appointment)

OFFICE: Earth sciences bldg. 4116

TEXTBOOK: *A first course in probability* by Sheldon Ross. The 9th edition is preferred, but the 7th or 8th are also fine.

COURSE OUTLINE: The course will be based on the first 8 chapters of Ross's book. The following topics will be discussed:

- 1) Some elementary combinatorics, such as combinations and permutations.
- 2) Sample spaces, events, and the axioms of probability theory.
- 3) Conditional probabilities, independence, and Bayes' formula.
- 4) Discrete random variables, expected value, and variance.
- 5) Continuous random variables.
- 6) Joint distributions, marginal distributions, and conditional distributions.
- 7) The expected value of sums of random variables, covariance, and moment generating functions.
- 8) Limit theorems: the weak law of large numbers and the central limit theorem.

GRADING SCHEME: The final grade is constituted as follows:

50% Final exam grade

20% Midterm exam #1 grade

20% Midterm exam #2 grade

10% Homework grade

MIDTERMS: There will be two 50 minute midterm exams during regularly scheduled classes on *Friday October 4* and on *Friday November 1*.

HOMEWORK ASSIGNMENTS: Weekly homeworks will be assigned on Friday and collected on the following Friday before the lecture starts. There will be no homeworks assigned in the weeks before the midterm exams (i.e., on September 27 and on October 25). In total, there will be 10 homeworks. The final homework grade will be calculated as the average grade of the 8 highest weekly homework grades.

MISSED MIDTERMS & HOMEWORKS: Missed midterms and homeworks will receive a zero grade. Homeworks that are handed in late will not be accepted.

Exceptions to the above considerations may be granted in the following two cases:

- Prior consent of the instructor.
- Medical emergency. In the case of a medical emergency, the instructor must be notified as soon as possible and presented with a doctor's note immediately upon return to UBC.

When a test is missed or a homework is not handed in, and if an exception has been granted by the instructor, there will be no make-up test or homework: the final exam grade will be used instead.