

**Instructor:** Richard Balka

**Instructor in Charge:** Omer Angel

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

**Lectures:** Mon Wed Fri 11:00--11:50, Math Annex 1100

**Course webpage:** [www.sites.google.com/site/balkarichard/home/teaching-2](http://www.sites.google.com/site/balkarichard/home/teaching-2)

**Office hours:** Tue 3-5pm, Fri 12:30-1:30 in LSK 300

**Course outline:** The course will be based on "**Introduction to Probability**" by Anderson, Seppäläinen, and Valkó. This is as yet unpublished, and will be provided to registered students online. The book "A First Course in Probability", by Sheldon Ross was used in the past, and is a good alternative reference for the course material. Topics include:

1. Randomness sample spaces, events, axioms of probability,
2. Conditional probabilities, independence and Bayes' formula,
3. Discrete random variables, expectation and variance, Chebyshev's inequality,
4. Continuous random variables, expectation and variance, Chebyshev's inequality,
5. Joint distributions, marginal distributions and conditional distributions,
6. Expectation of sums, covariance, moment generating functions,
7. Limit Theorems: the Law of Large Numbers and Central Limit Theorem.

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

**Homework:** Weekly assignments will be given. These are due at the **beginning** of class on the due date, almost every Friday. No late assignments will be accepted. The single lowest assignment will be ignored. Due dates for assignments: Jan. 20, 27, Feb. 3, 10, March. 3, 10, 17, 24, 31.

**Holidays:** February 13, Midterm break: February 20-24.

**Mid-terms:** The midterm will take place during class on Friday, February 17.

**Final Examination:** will take place in the April examination period. Please do not make travel plans before the exam schedule is announced.

**Discussion board:** We will use a piazza discussion board this term. You can ask questions regarding the course there, and answer other students' questions. Do not post solutions to assignments there.

**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.