

**Instructor:**

Yinon Spinka

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**Course webpage:**<https://www.math.ubc.ca/~yinon/math302/>**Office hours:**

Monday 15:00 - 16:00 LSK 300C

Wednesday 12:30 - 13:30 MATX 1118 with TA

Friday 15:00 - 16:00 LSK 300C

(see course webpage for updates)

**Discussion board:**

We will use the piazza discussion board. Use the following link to sign up: <https://piazza.com/ubc.ca/winterterm12018/math302>. You can ask questions regarding the course there. Significant participation in discussions may justify extra credit. Do not share solutions to assignments on piazza before the due date.

**Prerequisites:** One of MATH 200, MATH 217, MATH 226, MATH 253, MATH 263.

**Text:** The book “Introduction to Probability” by Anderson, Seppäläinen, and Valkó is recommended as a reference for this course, but is not mandatory. 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. Tchebycheff inequality
11. law of large numbers and central limit theorem

**Evaluation:** There will be homework assignments, a midterm exam, and a final exam.

**Homework:** Ten assignments will be given and marked for credit. The single lowest assignment grade will be ignored. Assignments are due at the beginning of class on the due date. No late assignments will be accepted. The assignment schedule is as follows:

<u>Assignment given</u>	<u>Assignment due</u>
September 14	September 21
September 21	September 28
September 28	October 5
October 5	October 12
October 12	October 19
October 26	November 2
November 2	November 9
November 9	November 16
November 16	November 23
November 23	December 30

**Midterm exams:** There will be a 50-minute midterm exam held during the regularly scheduled class hours on:

Wednesday, October 24.

Missing a test normally results in a mark of zero. Exceptions may be granted in two cases: prior consent of the instructor or a medical emergency. In the latter case, the instructor must be notified within two working days of the missed 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. There will be no office hours on the day of the midterm.

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

**Final mark:** The final mark will be calculated as follows:

Homework: 20%

Midterm: 30%

Final exam: 50%