

**Instructor:**

Section 101: Dr. M. Lohmann, ESB 4114, [marlohm@gmail.com](mailto:marlohm@gmail.com)

Section 102: Dr. R. Balka, ESB 4138, [balka@math.ubc.ca](mailto:balka@math.ubc.ca)

**Office hours:**

Section 101: Mon, 15:00-16:00, LSK 300, Wed, 16:00-17:00, MATX 1101, or by appointment.

Section 102: Tue, 14:00-15:30 and Wed, 9:30-11:00, LSK 300

**Course webpage:**

Section 101: <https://www.math.ubc.ca/~marlohm/math302.html>

Section 102: <https://www.sites.google.com/site/balkarichard/home/teaching-2>

**Discussion board:** <https://piazza.com/ubc.ca/winterterm12017/math302>. We will use the piazza discussion board. You can ask questions regarding the course here. 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:** Main reference for the course are notes by Anderson, Seppäläinen, and Valkó, that will be provided to the registered students online. Other references 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, two midterm exams, and a final exam.

**Homework:** Nine 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 15	September 22
September 22	September 29
September 29	October 6
October 6	October 13
October 20	October 27
October 27	November 3
November 3	November 10
November 17	November 29
November 29	December 1

**Midterm exams:** There will be two 50-minute midterm exams held during the regularly scheduled class hours on the following dates:

Wednesday, October 18,                      Wednesday, November 15.

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.

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

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

Homework: 10%

Tests: 20% each

Final exam: 50%

Term marks may be scaled for consistency in both sections of MATH 302.