

**Instructors:**

Section 201: M. Ferrante, MAT 238, [ferrante@math.ubc.ca](mailto:ferrante@math.ubc.ca).

Section 202: M. Lohmann, ESB 4114, [marlohmnn@math.ubc.ca](mailto:marlohmnn@math.ubc.ca)

**Office hours:**

Section 201: Mon. 16:00–17:00, Wed. 13:00–14:00, Fri. 11:00–12:00, MAT 238.

Section 202: Mon. 16:00–17:00, Wed. 14:00–15:00, LSK 300.

Section 202 auxiliary dates (joint w/ Math 302): Wed. 16:30–17:30, Fri. 13:00–14:00, LSK 300

**Course website and discussion board:** We use Canvas to publish course material and Piazza discussion board. Significant participation in discussions may justify extra credit. Do not share solutions to assignments on Piazza before the due date.

**Prerequisites:** One of MATH 302, STAT 302.

**Text:** The course text is S.M. Ross, “Introduction to Probability Models,” 11th edition, Academic Press, (2010). The 10th and 11th editions are indistinguishable for our purposes, apart from changes to page numbers, and you should feel free to use the 10th edition. Problems assigned from the text will be identical in both the 11th and 10th editions. You can also use the 9th edition, but if so you will need to consult the 11th or 10th edition to be sure to do the correct homework problems.

Optional more advanced references are:

G.R. Grimmett and D.R. Stirzaker, “Probability and Random Processes”, 3rd edition, Oxford, (2001)

J.R. Norris, “Markov Chains”, Cambridge University Press, (1997)

**Outline:** The course will be based primarily on topics from Chapters 4, 5, 6 of Ross. The main topics are:

1. discrete time Markov chains
2. exponential distribution and Poisson process
3. continuous time Markov chains

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

**Homework:** Nine assignments will be given and marked for credit. 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>
January 9	January 16
January 16	January 23
January 23	January 30
January 30	February 6
February 13	February 27
February 27	March 6
March 6	March 13
March 20	March 27
March 27	April 3

**Tests:** There will be two 50-minute tests held during the regularly scheduled class hours on the following dates: **Wednesday, February 13** – **Wednesday, March 20.**

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 April examination period.

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

Homework: 10%

Tests: 20% each

Final exam: 50%

Updated December 26, 2018.