MAT 5171 (Winter 2020)
Probability Theory II

Instructor:
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Course webpage

  http://mysite.science.uottawa.ca/rkulik/mat5171/mat5171.html

Course hours:
Monday 19:00-22:00

Midterm: No midterm

Final exam: TBA

Assignments: There will a short assignment each week. The assignments
will be announced on Monday with the deadline the following Monday.

Presentation: You will do a 15-20 minutes presentation on some theoretical
material.

Office hours:
Tuesday 09:00-11:00 (STM553)

Textbook:

- Patrick Billingsley, Probability and Measure (PB below).

I will prepare some lecture notes.

Evaluation and grading:

- The final grade is calculated as follows:

A) If the grade on the final exam is less than 40%, then the final grade is **F**

B) If the grade on the final exam is more than 40%, then the final grade is calculated as follows: Final exam 40%, Assignments 50%, Presentation 10%.

- https://www.uottawa.ca/administration-and-governance/academic-regulation-10-g

  Course Description: Laws of large numbers, characteristic functions, central limit theorem, conditional probability and expectation, some additional topics.

Tentative Course schedule:

- Review of probability, Law of large numbers (Chapter 22 in PB) - January 13;

- Law of large numbers, maximal inequalities (Chapter 22 in PB) - January 13 and January 20;

- Weak Convergence (Chapter 14 and 25 in PB) - January 20 and January 27;

- Poisson process (Chapter 23 in PB);

- Characteristic Functions (Chapters 26 in PB);

- Central Limit Theorem (Chapter 27 in PB);

- Conditional Probability (Chapter 33 in PB);

- Conditional Expectation (Chapter 34 in PB);

- martingales. Stochastic Processes. Brownian motion (Chapters 35, 36, 37 in PB);