Advanced Probability, MA 587–687–2E   Spring 2020

Class meets Tuesday, Thursday, 14:00–15:15, EB 225

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Office hours: Tuesdays and Wednesdays, 4:30–6:00, or by appointment
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Text: Sheldon Ross: A First Course in Probability. 9th Edition. Pearson. Occasionally, time to time, I will also hand out my own notes.
Additional text: Electronic material, including homework assignments and handouts, will be available at http://people.cas.uab.edu/~simanyi/teaching/MA-587-687/

Grading policy:

Homework	30 %
Midterm Exam, early to mid-March,	30 %
Final Exam, April 28, 1:30–4:00	40 %

Homework: The list of homework exercises and due dates will be posted on the instructor's web page. You need to submit your homework on the due date in class (or slide it under my office door). No late homework. Exercises marked as "Bonus" can be attempted for extra credit.
Tests: All tests in this course are open-notes. You may use a calculator, and most likely you will need one, so bring one with you. You may also use a laptop or a tablet PC.

The course will differentiate between 587 and 687 level students as follows:

In the tests, the 587 students will only get problems that will require calculations, computations, but no proofs, whereas the tests of 687 students will involve some proofs, as well.

Tentative content:

1. Conditional probability and independence
2. Discrete random variables
3. Continuous random variables
4. Exponential random variables
5. Functions of random variables
6. Normal random variables
7. Joint distributions
8. Mean value
9. Variance

The first 9 points above will only be briefly reviewed!

10. Moment generating function

11. Covariance and correlation
12. Weak and Strong Laws of Large Numbers
13. The Central Limit Theorem
14. Random walks
15. Poisson process

Welcome to my MA 587/687 class, and best of luck to you all!