

Spring 2015
COURSE ANNOUNCEMENT

Math 8659: Stochastic Processes
MWF 11:15 am – 12:05 pm, VinH 211

Instructor: Mikhail Safonov, VinH 231

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<http://www.math.umn.edu/~safon002>

Office Hours: MWF 1:00 pm – 2:00 pm, or by appointment

Textbook: *N. V. Krylov*, Introduction to the Theory of Random Processes, AMS, Graduate Studies in Mathematics, v. 43, 2002.

We plan to follow Chapters 1–3 and 5–6 in this book, with some exclusions. The emphasis will be made on mutual relations between stochastic integrals and partial differential equations. Some notes will be provided for material not covered by the textbook.

- Chapter 1. Generalities
- Chapter 2. The Wiener Process
- Chapter 3. Martingales
- Chapter 5. Infinitely Divisible Processes (if time permits)
- Chapter 6. Itô Stochastic Integral

Prerequisites: Math 8652 or equivalent. For supplementary reading, a more elementary text is recommended:

Lawrence C. Evans, An Introduction to Stochastic Differential Equations, 2013.

A version of this text is available online:

http://www.gaianxaos.com/pdf/stochastics/stochastic_diffeq.pdf

Homeworks and Exams: There will be 5 homeworks, one in-class Midterm exam, and one take-home Final exam.

- Homeworks: due on Feb 11, 25; Mar 11; Apr 3, 15.
- Midterm: in-class on Wednesday, Mar 25.
- Final: take-home, in-class time is reserved on Sat, May 16, 1:30 pm – 3:30 pm.

Grading: 30% comes from 4 best out of 5 homeworks, 30% from Midterm exam, and 40% from Final exam.