

MATH 7244 SYLLABUS

Fall 2011

- Course Number:** Math 7244
- Course Title:** Stochastic Processes and Stochastic Calculus I
- Lecture Time:** MWF 3:05–3:55pm
- Lecture Room:** Skiles 269
- Instructor:** Dr. Yuri Bakhtin
Associate Professor at the School of Mathematics
Office: Skiles 241
Email: bakhtin@math.gatech.edu
Home page: www.math.gatech.edu/~bakhtin
Office hours: by appointment
- Course Web Page:** *T-Square*
- Contacting me:** The best way to contact me is by email.
- Prerequisite:** Math 6242 (Probability II)
- Brief Description:** An introduction to continuous-time martingales, Markov processes and Itô's stochastic calculus.
- Book:** The official main text will be [KS]: *L.B.Koralov, Ya.G.Sinai, Theory of Probability and Random Processes*, Springer, 2007. Most of Part II of [KS] will be covered.
Other useful books are [KS2]: *I.Karatzas, S.E.Shreve: Brownian Motion and Stochastic Calculus* and [O]: *B.Oksendal, Stochastic Differential equations*.

Honor code: All students are expected to comply with the Georgia Tech Honor Code. The Georgia Tech Honor Code is available at <http://honor.gatech.edu>

Grading: There will be 4 homework assignments (each one is worth 15%, which amounts to total of 60%), one in-class mid-term exam (worth 15%), and one comprehensive final exam (worth 25% of the final score). Letter grades will be based on the accumulated points according to the standard 90%, 80%, 70%, 60% cutoffs: A: 90–100, B: 80–89, C: 70–79, D: 60–69, F: 0–59.

At the end of the course I will decide if I need to lower the above cutoffs.

Homework: Homework assignments will be given approximately once every three or four weeks, and will usually be due one week after they are handed out. All homework assignments will appear on t-square.

You are allowed to work together with other students on the homework as long as you each independently write up your own solution. You are encouraged to ask me questions.

Please staple the homework and print your name on the front page of each assignment you submit. All homework is due by 4pm on the due date or it will be considered to be late and will not be accepted.

Exams: At the exams you will have to demonstrate your knowledge of the course material as well as your ability to solve problems based on it. The *tentative* dates for the exams are:

Mid-term Exams: October 12 (Wednesday), in class, 50 minutes,

Final Exam: December 14 (Wednesday), 2:50pm - 5:40pm

All exams are closed-book and no aids will be allowed. Makeup exams are given only in extraordinary circumstances.

Some other special dates: There will be no class on Sep 5, Oct 17, Nov 25. Oct 14 is the drop day. Dec 9 is the last day of classes.