Instructor: Elena Yudovina, eyudovin@umn.edu, http://www-users.math.umn.edu/~eyudovin/teaching.html.

Teaching assistant: Jun Zhou, zhou0309@umn.edu.

Office hours: Elena’s are 6-7pm, day of week TBA during first lecture. Jun’s are TBA. You can also email us to set up an appointment.

Course textbook: There will be no official textbook for the course. Everything that’s examinable will appear on the Moodle course website and/or on Elena’s website. However, you may find any or all of the following resources to be useful.


Exam dates: Midterm October 15th, in class. Final Thursday December 17th, 5:30-7:30pm. If you require alternate arrangements, let me know as soon as possible.

Grading:

grade = 0.15 × (total quiz score) + 0.4 × (midterm score) + 0.4 × (final exam) + 0.05 × (participation)

Homework will be assigned weekly; it is optional, but strongly recommended. The main thing students from last year wished they did differently was spend more time on the homework. Please plan to spend at least 3-4 hours a week solving problems. Collaboration is encouraged on the homework, but not allowed on the quizzes and exams.

Course outline:

• Arbitrage pricing in the binomial market
• Review of probability and measure theory
• Gaussian random variables and processes
• Martingales
• Itô calculus
• Stochastic differential equations
• Black-Scholes-Merton model and the Feynman-Kac partial differential equation
• Girsanov’s theorem and applications
• Other topics may include: multicommodity models, incomplete markets, pricing American options
Participation: asking questions in class, coming to office hours, communicating with us in other ways... basically, if at the end of the semester, Jun and I have no idea who you are, then you're not participating enough.

No class on Thanksgiving: We will not be having class on Thursday, November 26th, which is Thanksgiving Day.

University policies:
Incomplete: The grade of “I” is assigned when a student has satisfactorily completed all but a small portion of the work of the course and has made arrangements to make up the work. You cannot get a grade of “I” just because you are behind in your work or it appears that you are failing the course.
Student Conduct: Academic honesty and respect for others are required in every course. Students are expected to follow the university policy on student conduct. Instructors and students are expected to follow the university policy on class expectations.
Physical and mental health issues: If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact the DRC at 612-626-1333 to arrange a confidential discussion regarding equitable access and reasonable accommodations. If you are registered with the DRC and have a current letter requesting reasonable accommodations, please contact me early in the semester to review how the accommodations will be applied in the course. As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. University of Minnesota services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via http://www.mentalhealth.umn.edu.