Stochastic Methods in Finance - Fall 2010

September 8, 2010

Points: 3

Day/Time: MW 6:10pm - 7:25pm

Location: HAMILTON HALL, Room 603

Instructor

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• Office Hours: by appointment

Teaching assistant

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• Office Hours: Tuesday 7-9pm (Room 1025 SSW)

Prerequisite: Calculus, Probability, Stochastic Processes (G6501 or equivalent)

Goal of this course: After taking this course, students should UNDERSTAND the most important stochastic methods used in finance, such as binomial models, stochastic calculus, and risk-neutral pricing, and be able to apply them in specific areas of finance, such as options, term-structure models, and credit risk. The goal of this course is not to discuss every part of stochastic analysis or finance, but to provide students with basic skills and knowledge necessary to master any topic in this field. There are two possible ways of teaching stochastic methods in finance - theoretical and applied. This course aims to be a balance between these approaches.

Textbook: The course textbooks are:

• SHREVE, S. E. (2004): *Stochastic Calculus for Finance II, Continuous-Time Models*, Springer (second part of the course)

These books are available in bookstores and libraries (call number: HG106 .S57 2004). Homeworks and reading assignments will be based on these textbooks.

Other related books:


Grading: The final grade will be determined as follows:

• Final exam - 40%
• Midterm exam I - 25%
• Midterm exam II - 25%
• Homeworks - 10%

Final exam: The day, time and location of the final exam will be determined by the office of university registrar. The final exam will be based on the entire course material.

Midterm exams: The midterm exams are scheduled for October 11th and November 15th.

Homeworks: Homeworks will be assigned every Wednesday and students are required to turn them in the following Wednesday in the class. Homeworks will contain exercises from the book. The lowest homework score will be dropped. A late homework (for a serious reason) will be accepted only if the student lets the instructor know ahead of the due date and the instructor approves the request.

TA Sessions: The teaching assistant will hold weekly office hours, where students will have opportunities to ask questions. However, students are expected to make a serious attempt to solve an exercise before asking the teaching assistant.