Math 510
Stochastic Analysis II

MWF: Time and room - TBA
Winter 2018

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Syllabus:
The main aim of this course is to give an accessible introduction to the main ideas, methods and techniques of stochastic analysis/stochastic calculus in continuous time targeted to mathematical finance. Many important notions, results and facts from stochastic analysis are presented in an appropriately simplified manner. Another important goal of the course is to present interconnections among disciplines of stochastic analysis and mathematical finance and to encourage students to further study of the subject.

The course will cover:
Stochastic integration with respect to a Wiener process and semimartingales with further exposition of key formulas and important facts as building blocks and powerful techniques for mathematical finance: changing of variables (Ito's formula), changing of measure (Girsanov's formula), martingale representations and decompositions.

Prerequisite: Math 505 “Stochastic Analysis I” or consent of the Department.

Recommended textbook:

Grading:
Final exam 50%, Midterm exam 30% (Exams are closed-book).
Homework/Project 20%.