Fall 2011

MATH 7380-2: Applied Stochastic Analysis

Time: Tuesday and Thursday 1:40–3:00

Room: Lockett 111

Prerequisite

Math 7311 (Real Analysis I) or equivalent

Textbooks

1. Kuo, H.-H.: Introduction to Stochastic Integration. Universitext, Springer, 2006.
2. Kuo, H.-H.: Gaussian Measures in Banach Spaces. Lecture Notes in Math., Vol. 463, Springer, 1975. (Reprinted by BookSurge Publishing, 2006)
3. Kuo, H.-H.: White Noise Distribution Theory, CRC Press, 1996.

Coverage

In this course we will cover the following topics and address related recent developments which will lead to current research in stochastic analysis.

1. Stochastic differential equations.
2. Applications to mathematical finance.
3. Gaussian processes.
4. Abstract Wiener space.
5. White noise theory.
6. General theory of stochastic integration.

Grading

The grade will be determined by homework (30%), presentation (40%), and the final exam (30%) with the tentative scale: A 90%; B 80%; C 70%

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