MATH 7366-1: Stochastic Analysis

Time: Monday, Wednesday, Friday 2:30–3:20

Room: Lockett 119

Prerequisite

Undergraduate probability theory such as Math 3355 or Math 4058

Textbook

H.-H. Kuo: Introduction to Stochastic Integration, Universitext, Springer, 2006

Reference

H.-H. Kuo: Gaussian Measures in Banach Spaces. Lecture Notes in Math, vol. 463, Springer, 1975 (Reproduced by Amazon, 2006)

Coverage

In this course we do not assume the prior knowledge of probability theory from Math 7360. The needed concepts will be fully explained in this course.

1. We will cover the Itô theory of stochastic integration from Chapters 2, 4, 5, 7, 8, and 10 of the textbook.
2. We will briefly describe other areas of stochastic analysis: abstract Wiener space, white noise analysis, and Malliavin calculus.
3. We will study my recent theory of general stochastic integration for stochastic processes arising from the Itô part and the counterpart.

Grading

The grade will be determined by homework (40%), presentation (20%), and the final exam (40%) with the following tentative scale by using the new university grading system:

$$96 \leq A^+ \leq 100 \qquad 92 \leq A \leq 95 \qquad 88 \leq A^- \leq 91$$
$$84 \leq B^+ \leq 87 \qquad 80 \leq B \leq 83 \qquad 76 \leq B^- \leq 79$$
$$73 \leq C^+ \leq 75 \qquad 70 \leq C \leq 72 \qquad 67 \leq C^- \leq 69$$
$$64 \leq D^+ \leq 66 \qquad 61 \leq D \leq 63 \qquad 58 \leq D^- \leq 60$$
$$F \leq 57$$

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