

Peking University - HSBC Business School

## Stochastic Processes for Finance

2014 Spring - Module 2

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**Instructor:** Kwangwon Ahn (C207), k.ahn@phbs.pku.edu.cn

**Teaching Assistant:** Fangzheng Shen (C207), fangzheng.shen@yahoo.com

**Lecture Hours:** Tuesday and Friday (3:30-5:20pm)

**Office Hours:** Wednesday (7:30-8:20am)

**Lecture Hall:** TBA

### Course Aims and Objectives:

The course is designed to provide students with a mathematical background to study modern financial theory. This approach has become extremely important for financial analysts or QUANT. We will study in a systematic way to price (evaluate) and hedge (eliminate) risks associated with the uncertainties of asset prices such as stocks, interest rates, etc.

### Essential Course Textbooks:

Baaquie, B.E., "Quantum Finance: Path Integrals and Hamiltonians for Options and Interest Rates," Cambridge University Press, 2007

Epstein, J., "Generative Social Science," Princeton Press, 2007

Judd, K., Tesfatsion, L., "Handbook of Computational Economics," North-Holland, 1996

Hull, J., "Options, Futures and Other Derivatives," Prentice Hall, 2006

Gut, A., "An Intermediate Course in Probability Theory," Springer, 2009

Liboff, R.L., "Introductory Quantum Mechanics," Addison-Wesley, 1980

Nielsen, L.T., "Pricing and Hedging of Derivative securities," Oxford University Press, 1999

Shreve, S., "Stochastic Calculus for Finance II: Continuous-Time Models," 2007

**Prerequisites:** Advanced Calculus, Probability Theory and Mathematical Statistics

**Lecture Notes:** <http://econ.kr.gs/>

**Grading:** The course grade will be based on exams (80%) and final project (20%).

**Extra Help:** Do not hesitate to come to me by appointment to discuss any aspect of the course.