

STOCHASTIC CONTROL IN MATHEMATICAL FINANCE

F. DELARUE

This course will be an introduction to the theory of optimal stochastic control, which is widely used in mathematical finance for portfolio optimization and option pricing. Lectures will consist of a description of mathematical tools for characterizing the optimal strategies: dynamic programming principle and Hamilton-Jacobi-Bellman equations, stochastic Pontryagin principle and backward stochastic differential equations.

Prerequisites: Probability theory with measure theory,
Stochastic calculus.
Second trimester.