

The exam in MM513, Probability Theory II

Pensum Spring 2009

Pensum: J. Jacod and P. Protter, Probability essentials, 189–235.

Notes on Hilbert space theory (contains 189–194 in the book)

Resumé of the lectures

Questions for the oral exam

1. Conditional expectations.
2. Martingales and stopping times.
3. Doob's optional sampling theorem.
4. Doob's martingale inequalities (The theorems 26.1, 26.2 and 26.3 in the book)
5. Doob's upcrossing theorem and the martingale convergence theorem.
6. Martingale convergence theorems for uniformly integrable martingales.
7. Backwards martingale and the strong law of large numbers.
8. The Doob decomposition of submartingales.