BASIC NOTIONS OF MATHEMATICAL FINANCE – syllabus

(wyklad i cwiczena w j. angielskim dla specjalnosci ekonomicznej ale nie tylko !)

Primary objectives of this course is to present basic notions of mathematical finance, including risk measures. Thus we will dicuss: markets; assets; options; stocks; bonds; arbitrage; liabilities; fundamental theorem of asset pricing (FTAP); Black-Scholes model; (mathematical) risks; value at risk (VaR); etc. Special attention will be given to rigorous mathematical arguments.

REFERENCES. Here are suggested references:

1. H. Foellmer, A. Schied, *Stochastic finance*, deGruyter 2004.   (∗)

2. T. Mikosh, *Elementary stochastic calculus*, World Scientific, 2000.

3. S. Ross, *An introduction to mathematical finance*, Cambridge, 2001.

Prerequisites:

i) working knowledge of English language;
ii) probability theory with some knowledge of measures theory;
iii) elementary stochastic processes, in particular Brownian motion.

WE WILL RECALL BASIC FACTS FROM PROBABILITY DURING THE EXERCIES, if needed!

Exams: There will be some short homeworks, 2 or 3 midterms and FINAL exam.

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