M Sc in Mathematical and Computational Finance

Quantitative Risk Management: Summary

This course will be based on the textbook "Quantitative Risk Management: Concepts, Techniques and Tools" by A.J. McNeil, R. Frey and P. Embrechts (2nd Ed, Princeton, 2015). Lecture notes are a shortened version of those prepared bythem with Marius Hofert, available on their website www.qrmtutorial.org.
The topics to be addressed are:

- Risk in perspective

- Basic concepts in risk management

- Market risk

- Extreme value theory

- Multivariate models

- Copulas and dependence

- Aggregate risk

Problem sheets will be available for the classes in weeks 3 and 5. These will involve a mixture of mathematical modelling and analysis, statistics and computation, and reading some summaries of historical risk management failures. These summaries are taken from Robert Jarrow's book "The Economic Foundations of Risk Management" (World Scientific, 2017).