

- Faculté des sciences économiques
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Risk Management (5AF2026)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en finance	Cours: 4 ph	cont. continu	6

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Automne

Equipe enseignante:

Dr. Guido Bolliger
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Objectifs:

The course has the following learning objectives:

- Become familiar with the various types of risks facing institutions and learn how to measure and manage these risks.
- Become accustomed to the main features of asset returns.
- Learn to apply state-of-the-art, but tractable in practice, risk measurement and risk management techniques.
- Become familiar with state-of-the-art volatility modeling and learn how to use them to forecast portfolio volatility.
- Become familiar with the backtesting techniques that are used to assess the quality of risk management models.
- Become familiar with the instruments and techniques, that are used to manage and measure credit risk.

Contenu:

1. Chapter 1: Probability theory and quantitative analysis
2. Chapter 2: Risk factor modelling
3. Chapter 3: Capital markets and financial products
4. Chapter 4: Value at Risk as a tool for market risk management
5. Chapter 5: Credit risk management.
6. Chapter 6: Measuring and assessing liquidity risk

Problem sets:

Students will have to solve five problem sets that will be corrected in class. These problem sets will be practical implementations of the theoretical concepts that are introduced during the lectures. Even if they can be solved on Excel, it is highly recommended to use a statistical/econometric package such as Matlab to solve them. Students will have the opportunity to get familiar with Matlab during a specific training session right after the start of the class.

Forme de l'évaluation:

2-hour (open book) written exam during the last lecture of the semester: 60% of the final evaluation.
Problem sets to be solved by groups of three students: 40% of the final evaluation.
Re-take exam (August-September): 2-hour written exam (100%).

Documentation:

Alexander, C., 2009, Market Risk Analysis (four-volumes set), John-Wiley and Sons.
Christoffersen, P., 2012, Elements of financial risk management, Academic Press.
De Servigny, A. and O. Renault, 2004, The Standard & Poor's Guide to Measuring and Managing Credit Risk, McGraw and Hill.
Hull, J., 2012, Options, Futures and Other Derivatives, Pearson.
Jorion P., 2011, Financial Risk Manager Handbook, Wiley Finance.
Jorion, P., 2002, Value at Risk, McGraw-Hill.
McNeil, A., Frey R., and P. Embrechts, 2005, Quantitative Risk Management: Concepts, Techniques, and Tools, Princeton University Press.
Meucci, A., 2005, Risk and Asset Allocation, Springer Verlag.
Sheppard, K., 2012, Financial Econometrics Notes, Available at:
http://www.kevinsheppard.com/images/c/c0/Financial_Econometrics_2012-2013.pdf

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Forme de l'enseignement:

Lectures: 4 hours per week.